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A COLLECTION OF WEST INDIAN DEMOSPONGIAE (PORIFERA). IN APPENDIX, A LIST OF THE DEMOSPONGIAE HITHERTO RECORDED FROM THE WEST INDIES

The sponges here recorded belong to a collection I made in the years 1963 and 1964 in the Bahamas, Jamaica, the Dominican Republic and Puerto Rico. All the material has been collected by diving, at depths not exceeding 45 m. Each specimen has received a register number (R.N.) which refers to my files and preparations. Colours indicated as « C.C. » refer to Séguy's « Code Universel des couleurs ». The collection is being deposited at the Museum of Natural History of Genoa (MSNG).

DEMOSPONGIAE

HOMOSCLEROMORPHA

HOMOSCLEROPHORIDA

Plakinidae

Plakortis simplex Schulze

Plakortis simplex Schulze, 1880: 430

Occurrence. Duncans (Jamaica), fore-reef slope, depth 35-45 m, 30 March 1964. R.N. NC.12, NC.25.
La Parguera (Puerto Rico), depth 0.5 m, mangrove, 3 May 1964. R.N. LP.12.
La Parguera (Puerto Rico), depth 25-30 m, 12 May 1964 R.N. SH. 5, SH.6.
Boca Chica (Dominican Republic), depth 20 m, 12 April 1964. R.N. BC.34.

NC.12: massive, large (only a fragment 7 × 3 × 2 cm collected). Consistency firm, slightly compressible, inelastic, easy to tear. Colour light reddish brown, interior tan; uniformly cream after preservation in formalin. Oscules few, presently contracted. Diactines 105-180 × 2.5-5.5 μm, triactines very rare.

NC.25: massive, lobate, large (only a fragment in the form of an elongated lobe 9 cm high and 3.5 cm in diameter was collected). Con-

sistency rubbery, easy to cut. Colour brownish black to dark brown; dark brown in formalin. Oscules few, sparse, large, presently contracted. Diactines 110-180 × 2.5-5.5 μm, no triactines observed.

LP.12: enveloping a mangrove root, 5 × 2 × 1.5 cm. Smooth, compressible, not elastic, easy to tear. Colour dark brown, middle brown in the dry state. Oscules not apparent. Diactines 70-130 × 2-3 μm, triactines very rare.

SH.5: irregularly massive to cushion-shaped, large (two fragments are available, the largest one 8 × 3.5 × 1.5 cm). Smooth, firm but fragile. Colour red to salmon-pink, internally tan; uniformly cream after preservation in formalin. Oscules sparse, large, with tronco-conical elevated rim collapsing soon after collection. Diactines 130-185 × 3.5-5.5 μm, triactines rare.

SH.6: cushion-shaped, roundish, diameter 6 cm, thickness 2.5 cm. Consistency as in the specimen above. Colour drab externally and internally, light brown after preservation in formalin. Two oscules in the middle, 1 cm in diameter, with elevated rim collapsed after collection. Diactines 130-180 × 3.5-5.5 μm, no triactines observed.

BC.34: massive, smooth, fleshy, weak consistency, dull drab, lighter internally. Oscules with elevated rim collapsed upon collection. Triactines extremely rare.

These specimens are remarkable for their size. The diactines are larger, with the exception of specimen LP.12, than generally reported. The colour of specimen SH.5 – red verging to salmon-pink – is an interesting addition to the known colour range of this species.

Dercitopsis onkodes (Uliczka)

Plakinastrella onkodes Uliczka, 1929: 60

Occurrence: Boca Chica (Dominican Republic), depth 7-8 m, 11 April 1964. R.N. BC.12, BC.56, BC.57.

BC.12: in life: brownish grey with a violet tinge, massive, heavy, compact, fragile.

BC.56: in life: drab-brown, interior tawny, fragile.

BC.57: in life: darker than BC.56, interior full of debris.

Spicules: 1) Diactines 16-180 × 1-4.5 μm. 2) Calthrops fairly abundant, rays 23-70 × 10-14 μm. 3) Triactines very rare, rays 23-41 μm.

TETRACTINOMORPHA

ASTROPHORIDA

STELLETTIDAE

Stellettinopsis dominicana sp. n. (Fig. 1, 2)

Occurrence: Boca Chica (Dominican Republic), depth 7-8 m, 12 April 1964. R.N. BC.55.

Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964. R.N. BY.26.

Holotype (BC.55): MSNG 47679

BC.55 is an irregularly conical fragment measuring 6 × 6 × 3.5 cm. In life the consistency of the sponge was firm, incompressible, the surface was encrusted by a red *Microciona*, the interior colour was cream, the oscules were blue-black, 8-10 mm in diameter. There is no distinct cortex; the choanosome is densely packed by oxeas in confused tracts which, at the surface, become perpendicularly arranged, forming a dense microscopical hispidation.

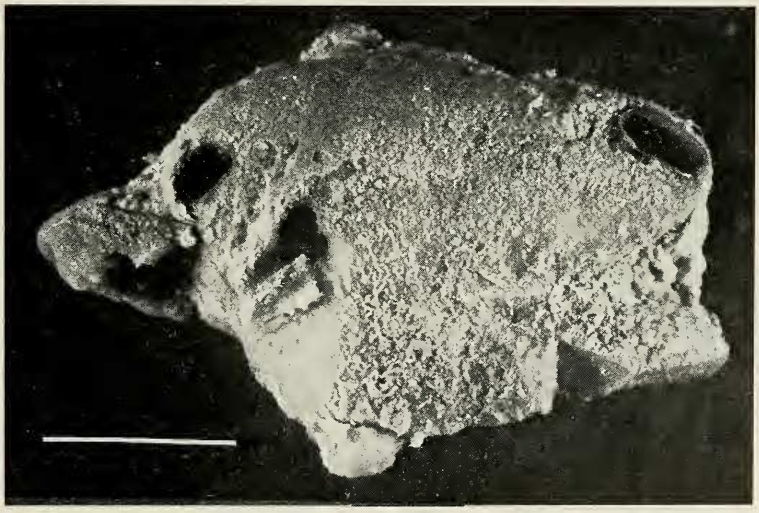


Fig. 1 - *Stellettinopsis dominicana* sp. n., the holotype. Scale: 2 cm.

Spicules: 1) Oxeas stout, regularly curved, often modified to styles, rarely to strongyles, measuring 940-1550 × 40-73 μm. 2) Ortho- to dichotriaenes extremely rare, with a reduced and irregular cladome measuring 100-150 μm, rhabdome markedly conical, about 650-850 ×

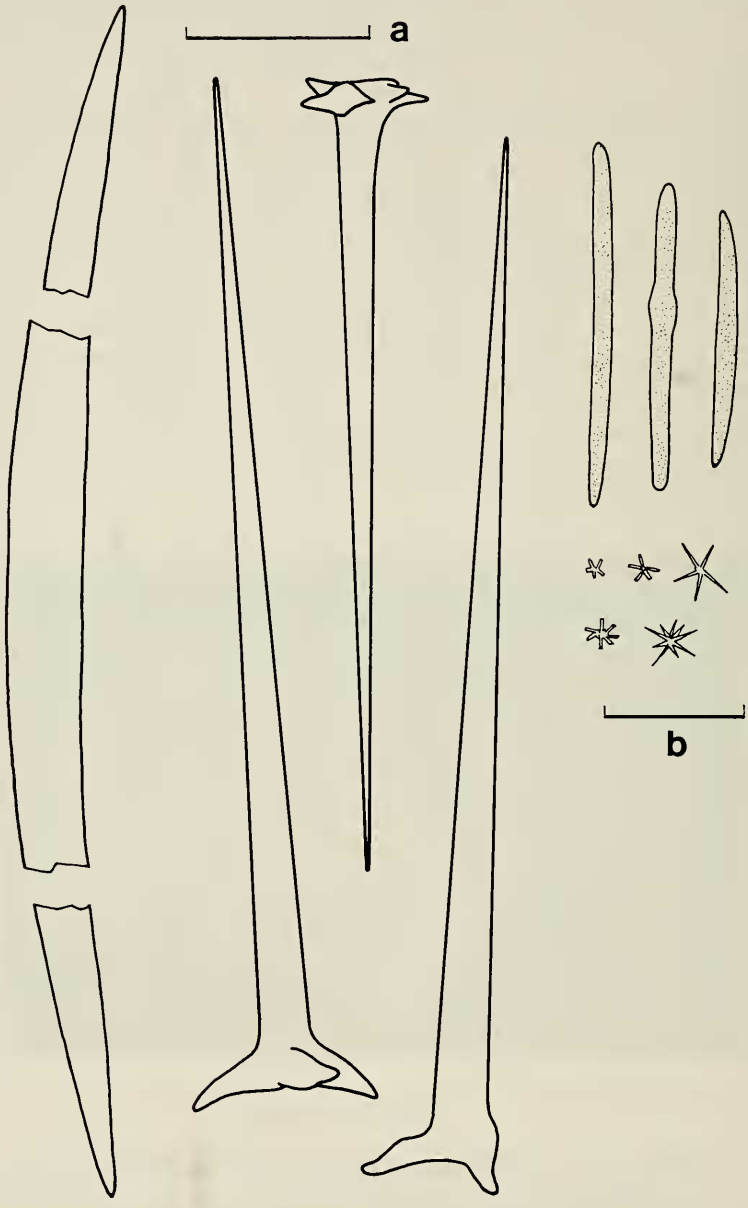


Fig. 2 - Spicules of *Stellettinopsis dominicana* sp. n. Scale a: 50 μm, scale b: 30 μm.

35-47 μm. 3) Ectosomal acanthorhabds, oxeote to strongylote, often with a faint central swelling, measuring 55-84 × 3-4.5 μm. 4) Chiasters 6-7.5 μm in diameter. 5) Oxyasters 8.5-14.5 μm in diameter.

BY.26 consists of two fragments, dry. The sponge was a low cushion, with the surface heavily sedimented, compact, firm, cream-white internally. There is no superficial differentiation; the spiculation is in dense, rather confused tracts tending to a perpendicular arrangement at the surface.

Spicules: 1) Oxeas curved, measuring 760-1220 × 23-46 μm. 2) Ortho- to plagiotriaenes, rhabdome 350-600 μm, clads 20-80 μm. 3) Acanthorhabds measuring 55-75 μm, 2.5 μm thick, ends obtuse. 4) Chiasters to oxyasters with a diameter of 7-14 μm.

The difference in stoutness between the oxeas of the two specimens is remarkable.

This species is near to *Stellettinopsis corticata* CARTER (1879: 348) from Australia, a species which, until SOLLAS' redescription (1888: 200) was thought to be devoid of triaenes.

Stelletta fibrosa (Schmidt) (Fig. 3)

Ancorina fibrosa Schmidt, 1870: 67

Occurrence: La Parguera (Puerto Rico), depth 0.5-1 m, 9 May 1964. R.N. LP.56.

The specimen is irregularly massive, attached to a mass of coralline algae. Size 6 × 4 × 2.5 cm. The colour was cream-white with some lavender tinge, the consistency firm, slightly compressible. The surface is even, harsh to the touch. The cortex is conspicuous, not separable. The pores are crowded, scattered over the entire surface; four oscules, on one side of the sponge, measure from 2 to 6 μm.

Spicules: 1) Oxeas 1170-1500 × 23-38 μm. 2) Plagio- to protriaenes, rhabdome 1100-1300 × 13-29 μm, cladome 75-90 μm, clads 43-58 μm. 3) Anatriaenes very rare, rhabdome 1170-1290 × 12-23 μm, cladome 50-80 μm, clads 19 μm. 4) Tylasters rather rare, with mostly 5 to 9 thin rays, 10-15 μm in diameter.

This specimen appears conspecific with *Ancorina fibrosa* Schmidt and with *Pilochrota fibrosa globulariformis* WILSON (1902: 385). Synonymizations proposed by de LAUBENFELS require confirmation. *Myriastra*

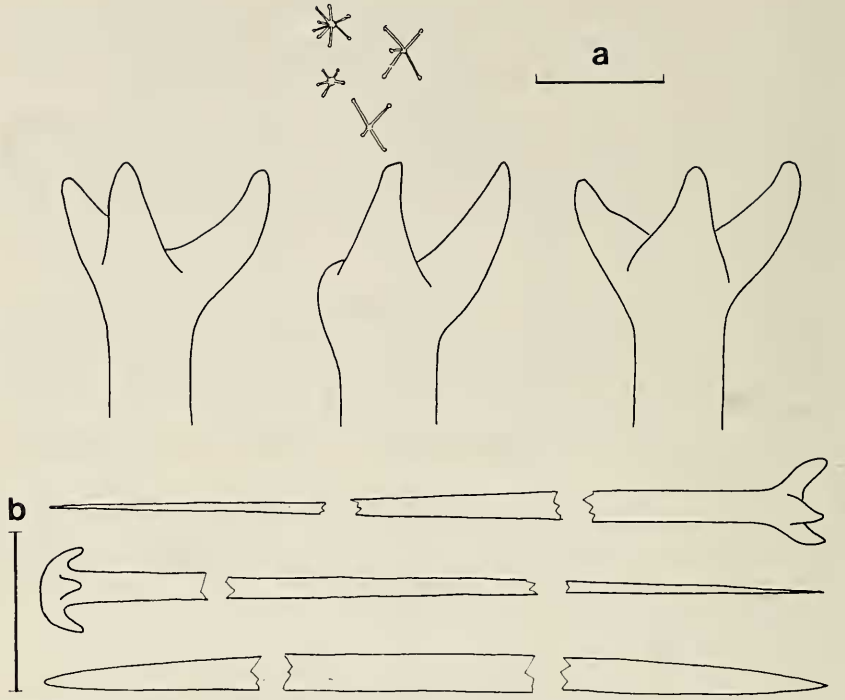


Fig. 3 - *Stelletta fibrosa* (Schmidt). Spicules of specimen LP.56. Scale a: 30 μm, scale b: 150 μm.

fibrosa of WELLS *et al.* (1960: 233), according to description, seems conspecific with *Pilochrota variablis* WILSON (1902: 384), which in turn appears as a distinct species of *Stelletta.*

Stelletta variastra sp. n. (Fig. 4, 5)

Occurrence: La Parguera (Puerto Rico), mangrove, shallow water, 8 May 1964. R.N. LP.65.

Holotype: MSNG 47680

The specimen, preserved dry, is contracted, amorphous, measuring 3 × 2.5 × 1.5 cm. There is no apparent cortex, the surface is hispid, sedimented.

Spicules: 1) Oxeas variable, the larger ones evenly curved, the thinner ones flexuous, size 470-1400 × 6-29 μm. 2) Plagiotriaenes

Fig. 4 - *Stelletta variastra* sp. n., the holotype. Scale: 1 cm.

Fig. 5 - Spicules of *Stelletta variastra* sp. n. Scale a: 20 μm, scale b: 50 μm, scale c: 150 μm.

abundant, rhabdome straight, curved or flexuous, 500-1200 × 9-33 μm, cladome scarcely developed, mostly reduced, often vestigial, 22-80 μm. Two dichotriaenes, dubiously proper, have been observed. Their rhabdome is straight and conical, 410 × 10 μm, the protoclads 50 μm, the deuteroclads 20 μm long. 3) Anatriaenes rare, rhabdome about 1000 μm by 18-23 μm, cladome 46-63 μm. 4) Tylasters variable, with thin or thicker rays, more or less spined, 4 to 10 rays, diameter 11.5-17.5 μm. 5) Sclerites (apparently modified tylasters with markedly thickened rays), tending to an irregularly globular shape, diameter 8.5-12 μm. 6) Spheroxyasters to oxyasters (the latter not frequent), diameter 11.5-17.5 μm.

Stelletta pudica (Wiedenmayer) (Fig. 6, 7)

Jaspis pudica Wiedenmayer, 1977: 172

Occurrence: Bimini (Bahamas), lagoon, depth 0.5-1 m, 16 March 1964. R.N. BL.11a, BL.24.

Specimen BL.11a is part of a massive sponge about 5 cm in diameter, BL.24 is a slice, 3.5 cm thick, of an almost spherical sponge about 12 cm in diameter, with a very narrow base of attachment. The surface is heavily sedimented and incorporates various debris. BL.11a

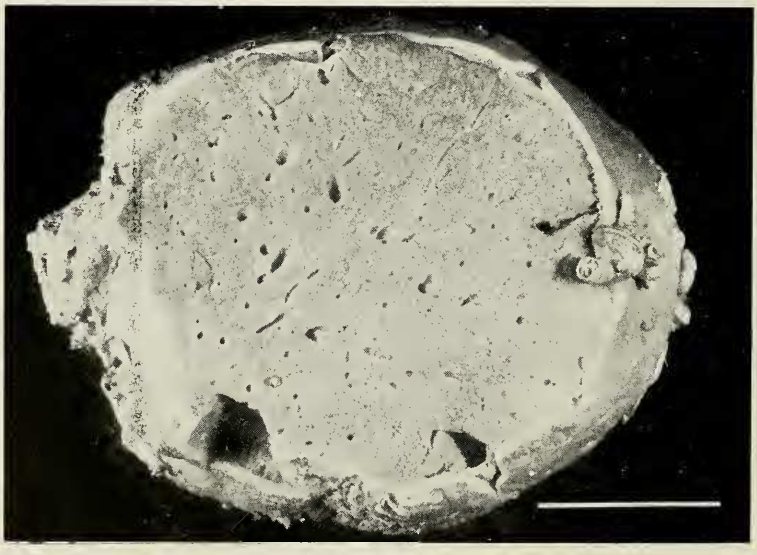


Fig. 6 - *Stelletta pudica* (Wiedenmayer), specimen BL.24 sectioned. Scale: 3 cm.

was overgrown partially by *Chondrilla nucula*. The superficial colour of BL.24, under the sediment, was noted in life as dark yellowish or greenish, violaceous at the underside. The colour of the interior was drab, with the cortex darker. The colour of the spirit-preserved specimens is cream to buff, with a violaceous tinge; the cortex appears lighter. The latter is clearly differentiated, 1 to 2 mm thick. The consistency is that of tough rubber.

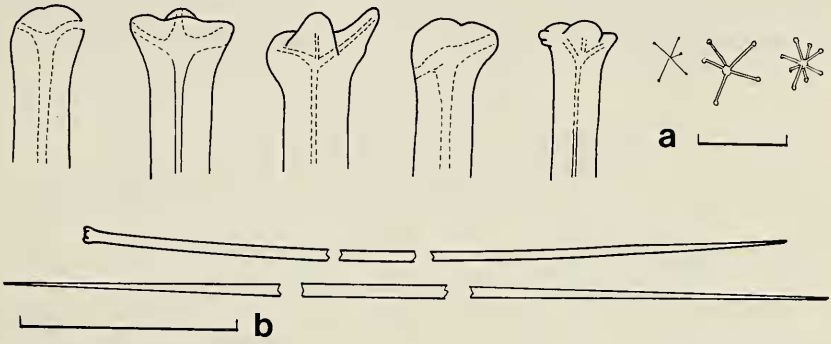


Fig. 7 - *Stelletta pudica* (Wiedenmayer). Spicules from specimens BL.24 and BL.11a. Scale a: 20 μm, scale b: 40 μm.

Spicules: 1) Oxeas straight or very slightly curved, with axial canal apparent, measuring 870-1230 × 6-15 μm. 2) Triaenes with a rhabdome about as long as the oxeas, 12-15 μm thick under the cladome; the latter is rudimentary. These spicules are rare, but are present in both specimens. 3) Tylasters with 4 to 8 rays, 10-17 μm in diameter, not abundant.

No triaenes have been observed by WIEDENMAYER in his *Jaspis pudica*. Indeed, I could not find any in some sections from the paratype which I obtained through the courtesy of Dr. Ruetzler of the National Museum of Natural History. Nevertheless, I have no doubt about the conspecificity of the present material with WIEDENMAYER's sponge.

Pachastrissa hartmeyeri Uliczka

Pachastrissa hartmeyeri Uliczka, 1929: 50

Occurrence: Punta Salinas (Dominican Republic), depth 4 m, 4 April 1964. R.N. SDS.3.

The specimen consists of closely-set, anastomosing digitate processes, hollow, closed distally, 5-8 mm in diameter. The consistency (in spirit) is very soft and fragile. The ectosome, supported by tangential oxeas, is extremely delicate and readily separable. Its colour is dark brown, while the choanosome is cream.

Spicules: 1) Oxeas measuring 40-560 × 2-12 μm. They might be regarded as belonging to three categories, but intermediates are present. The smaller ones, measuring 40-90 μm, are the most numerous. 2) Calthrops with rays measuring 180-220 × 7-11 μm. 3) Calthrops with rays measuring 50-70 × 3.5-5 μm. 4) Oxyasters without centrum, with a variable number of rays and a diameter of 11-16 μm.

Pachataxa lutea sp. n. (Fig. 8, 9)

Occurrence: La Parguera (Puerto Rico), depth 20-25 m, 12 May 1964. R.N. SH.1.

Holotype: MSNG 47681

The specimen was collected under an overhang, in a permanently shadowed position. It is cushion-shaped, measuring 7 × 5 × 1.5 cm. The colour in life was light yellow, turned greenish yellow soon after

Fig. 8 - *Pachataxa lutea* sp. n., the holotype. Scale: 2 cm.

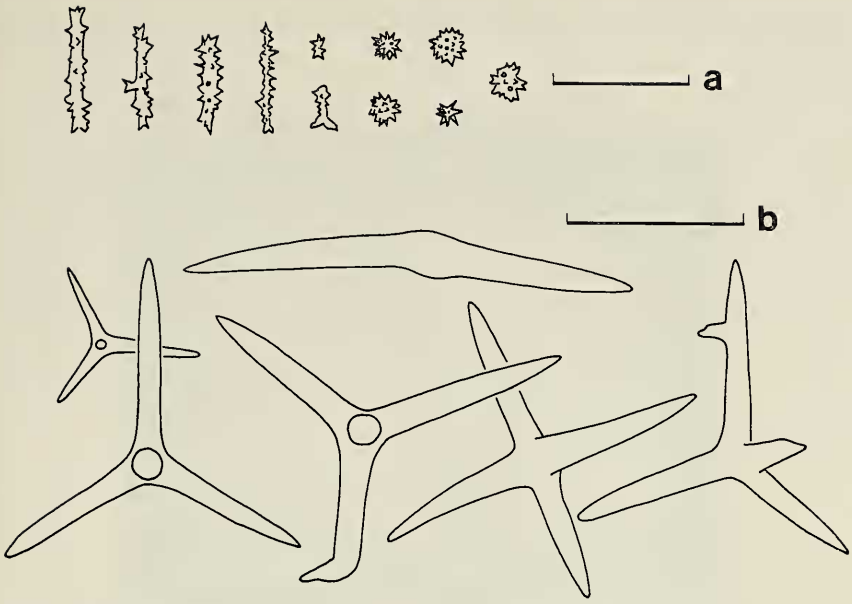


Fig. 9 - Spicules of *Pachataxa lutea* sp. n. Scale a: 30 μm, scale b: 150 μm.

collection; after preservation in formalin it is dark brown, lighter internally. The consistency was fleshy, firm, compressible. The oscules are presently contracted.

Spicules: 1) Calthrops, rather regular but occasionally reduced to diactines, actines 70-180 μm. 2) Microrhabds spiny, very irregular, measuring 8-26 × 3-8 μm (spines included), the more common size being 17-23 × 3-6 μm. 3) Spherasters rather irregular, with variable number and length of rays. All the spicules are abundant, not localized.

Geodiidae

Geodia neptuni (Sollas)

Synops neptuni Sollas, 1886: 198

Occurrence: Boca Chica (Dominican Republic), depth 20-30 m, 15-27 April 1964. R.N. BC.88, BC.58.

The sponges were cylindrical, slightly wider at the base, with a deep central depression, about 30 cm high. Only fragments, cut from the

rim, are available. The colour was middle brown, the consistency as wood, the surface smooth, not hispid, the cortex 5-6 mm thick.

Spicules: 1) Triaenes very rare. Few of them, mostly broken, have been obtained from many preparations. They are orthotriaenes verging to plagiotriaenes, rhabdome about 1000 × 24 μm, clads 110-160 × 24-32 μm. 2) Oxeas 1000-1600 × 8-38 μm, some modified to styles. The thinner ones have long sharp points, the thicker ones shorter and blunt points. Some abnormal oxeas in the form of a plagiomonaene, as figured by Sollas for *Synops vosmaeri* are present. 3) Ectosomal oxeas about 230 × 3 μm, often slightly bent at the middle. 4) Sterrasters mostly spherical, 57-70 μm in diameter. 5) Oxyasters 14.5-23 μm in diameter, with 4 to 9 rays with spined ends. 6) Strongylasters 4-8 μm in diameter.

Geodia gibberosa Lamarck

Geodia gibberosa Lamarck, 1815: 334

Occurrence: La Parguera (Puerto Rico), depth 5 m, 9 May 1964. R.N. LP.53. La Parguera (Puerto Rico), mangrove, depth 0.3-0.5 m, 9 May 1964. R.N. LP.80, LP.85.

LP.53: about 3 cm wide, thickly encrusting on *Porites*.

LP.80: massive, rounded, 11 × 9 × 5 cm, on mangrove root. Colour drab to cream, interior tan to cream.

LP.85: measuring 4 × 1 cm, around a mangrove root. Colour cream to off-white, interior violaceous.

In all three specimens the cortical oxeas have one rounded end, appearing as strongyloxeas. It is curious that such a character should have been reported only by authors dealing with East Atlantic material, Topsent (1918: 613) and Lévi (1959: 117).

Geodia flexisclera sp. n. (Fig. 10, 11)

Occurrence: Bimini (Bahamas), lagoon, depth 0.5 m, 16 March 1964. R.N. BL.13.

Holotype: MSNG 47682

The specimen grows on a mollusk valve, with extended base of attachment; it is 2 cm high and 3 cm wide at the base. The colour in life was greenish, it is middle brown after being preserved dry. The cortex is very thin, not detachable. Oscules and pores are not apparent

(the specimen is badly preserved). The ectosome incorporates abundant calcareous sand.

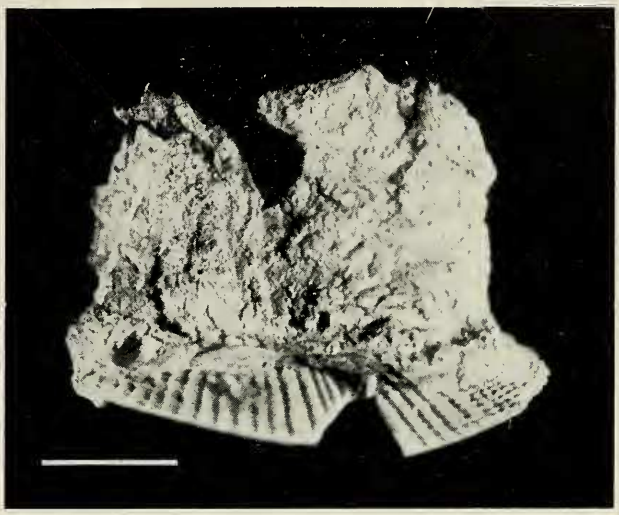


Fig. 10 - *Geodia flexisclera* sp. n., the holotype. Scale: 1 cm.

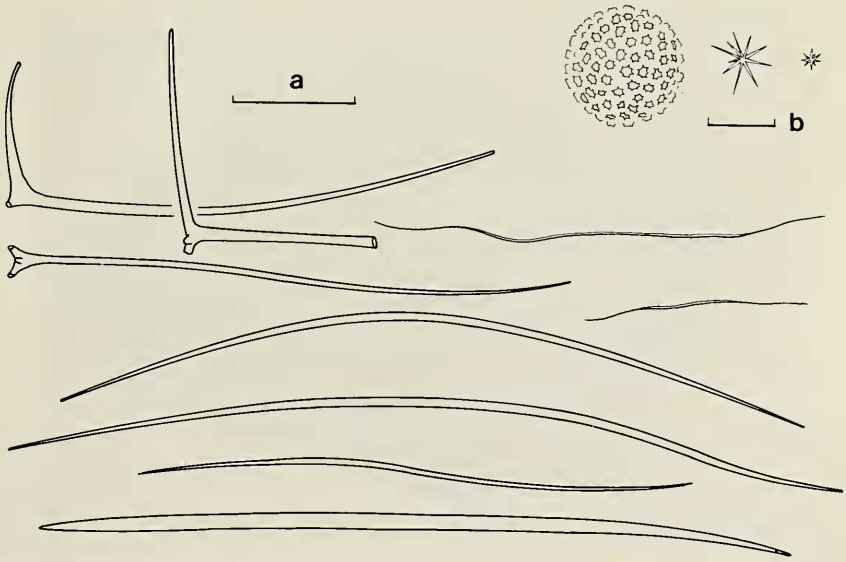


Fig. 11 - Spicules of *Geodia flexisclera* sp. n. Scale a: 150 μm, scale b: 20 μm

Spicules: 1) Orthotriaenes to plagiotriaenes, not abundant, broken in the preparations, rhabdome straight or curved, about 500-800 μm, clads variable in length, 70 to 200 μm. 2) Oxeas very variable in shape and size, rarely straight, mostly curved or sinuous, 580-1100 × 5.5-18 μm. 3) Oxeas sinuous, 150-280 × 2.5-3 μm. There are some intermediates with the larger ones. 4) Sterrasters spherical, 33-40 μm in diameter. In the mature ones the tubercles are slightly larger (about 3 μm) and more spaced than in *Geodia gibberosa*. They bear six or more spines. 5) Oxyasters with a diameter of 9-23 μm, with 6 to 12 slender rays. 6) Chiasters variable, 3.5-8 μm in diameter.

Erylus bahamensis sp. n. (Fig. 12, 13)

Occurrence: Atholl Island (Bahamas), depth 1-4 m, 25 February 1963. R.N. 1095.
Sosua (Dominican Republic), depth 20-40 m, 19 April 1964. R.N. SOS.9.
Boca Chica (Dominican Republic), depth 30-40 m, 15 April 1964. R.N. BC.66.
Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964, R.N. BY.28.

Holotype (1095): MSNG 47683

Specimen 1095 is massive, with short lobes bearing large apical oscules, large (only a fragment was collected, measuring 10 × 6 × 5 cm).

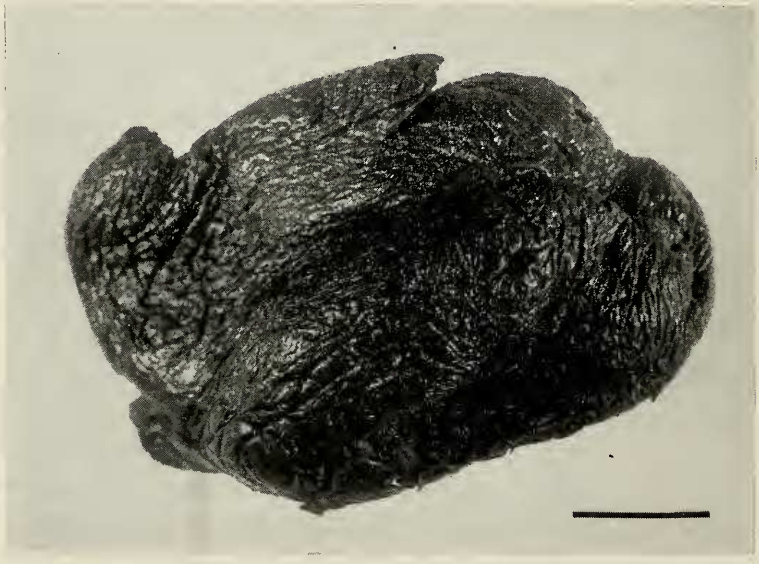


Fig. 12 - *Erylus bahamensis* sp. n., the holotype. Scale: 2 cm.

Externally brownish black, internally cream-white; dark brown after preservation in formalin, slightly lighter internally. The consistency is fleshy, softly elastic; the surface smooth; the ectosome easily detachable. The pores are uniformly distributed, 50-100 μm in diameter, 100 μm or a little more apart.

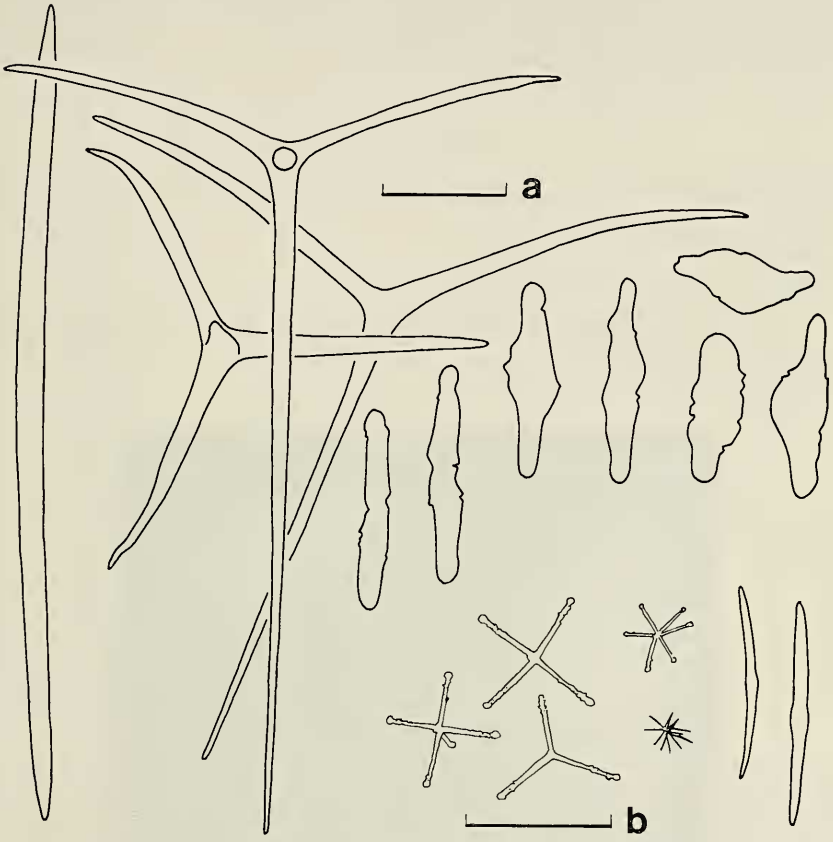


Fig. 13 - Spicules of *Erylus bahamensis* sp. n. Scale a: 100 μm, scale b: 30 μm.

Spicules: 1) Oxeas 530-850 × 6-15 μm. 2) Orthotriaenes, rhabdome 370-590 μm, clads 120-340 μm, one clad often aborted, and some calthrops. 3) Microrhabds smooth, with obtuse points, slightly centrotylote, 31-50 × 2.5 μm. 4) Aspidasters with granulated surface, thin, irregularly elongated, 125-190 × 19-40 μm. 5) Tylasters without cen-

trum, with 3 to 7 (mostly 4-5) thin, straight, isodiametric, microspined, tylote rays, diameter 15-28 μm. Some asters, rare, are multirayed (10 rays or more) and have a smaller diameter, 10-12 μm: they are not clearly separable as a distinct category.

WIEDENMAYER (1977: 181) identified a specimen from Bimini with *Erylus formosus* Sollas, but the asters he described and figured are different from those of SOLLAS (1888: Pl. 28). WIEDENMAYER's specimen appears to belong to the present species.

Erylus clavatus sp. n. (Fig. 14, 15)

Occurrence: Duncans (Jamaica), fore reef slope, depth 40-45 m, 30 March 1964. R.N. NC.7a, NC.7b.

Holotype (NC.7a): MSNG 47684

Paratype (NC.7b): MSNG 47685

The two specimens in the collection are roughly club-shaped, with irregular protuberances on top, growing erect on a restricted base.

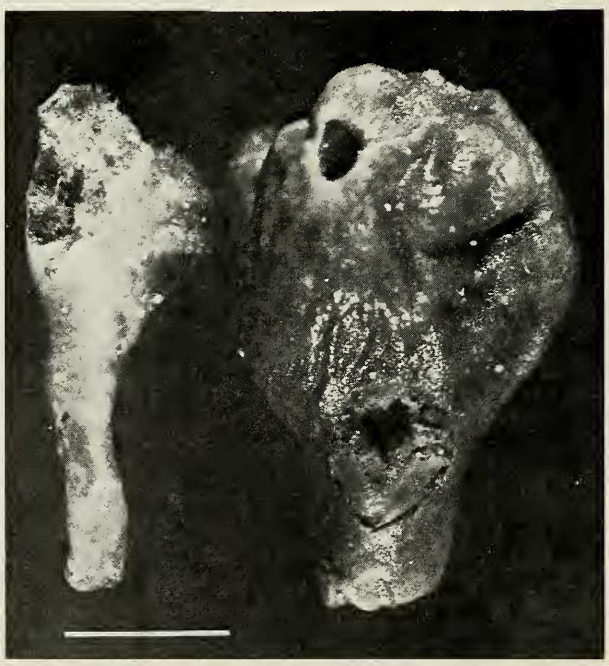


Fig. 14 - *Erylus clavatus* sp. n., holotype (right) and paratype (left). Scale: 1 cm.

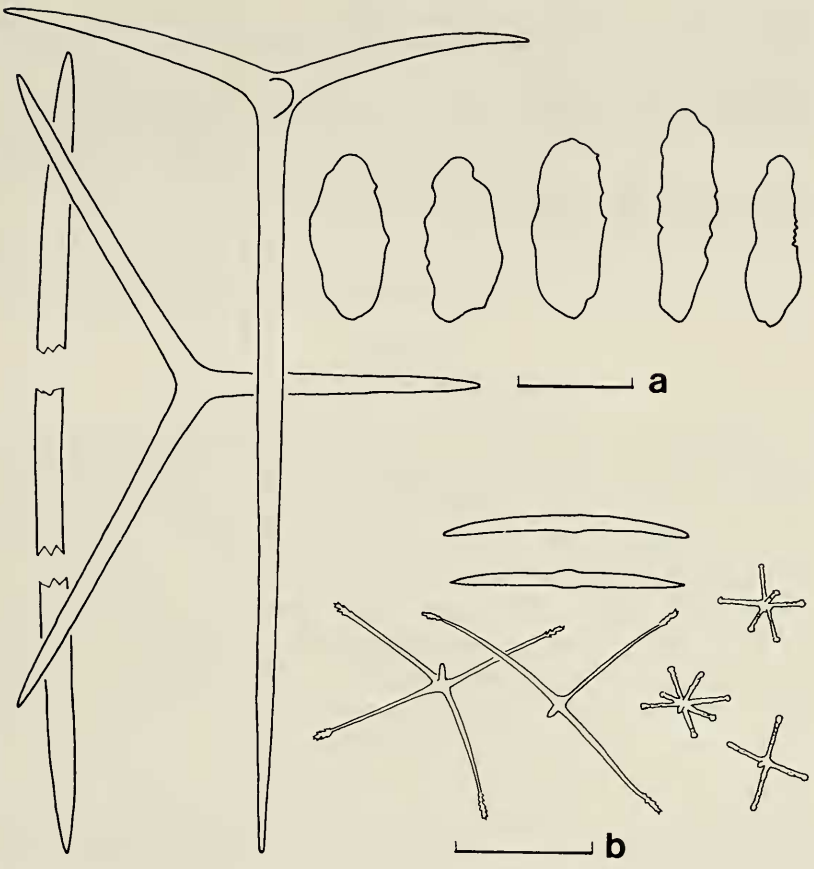


Fig. 15 - Spicules of *Erylus clavatus* sp. n. Scale a: 100 μm, scale b: 30 μm.

NC.7a is 4 cm high, 2.5 cm in maximum diameter, 6 mm at the truncated base. NC.7b is 3.5 cm high, 1.2 cm in maximum diameter, 2 mm at the base. NC.7a bears on the upper part three oscules 3-4 mm wide, leading into wide cavities. The pores are not evenly distributed: measuring 140-180 μm, they form irregular clusters in which they are 270-360 μm apart. The specimens were tough, inelastic, grey-greenish to dirty white in life; preserved dry and now in spirit, they are hard, incompressible, light brown.

Spicules: 1) Oxeas 930-1230 × 14-28 μm, a few modified to styles with the rounded end faintly swollen. 2) Orthotriaenes, rhabdome 600-

780 μm, clads 260-360 μm; some appearing as calthrops with about 230 μm-long rays. 3) Aspidasters with granulated surface, 145-195 × 47-55 μm. 4) Microrhabds smooth, slightly centrotylote, with more or less obtuse points, 48-63 × 2.5 μm. 5) Oxyasters with indistinct centrum, 3 to 7 rays thin, isodiametric, tapering to spined extremities, diameter 58-63 μm. 6) Tylasters 21-29 μm in diameter, with 4 to 7 thin, isodiametric, microspined, tylote rays.

SPIROPHORIDA

TETILLIDAE

Cinachyra spp. (Fig. 16)

The task of identifying *Cinachyra* specimens with described species implies more than ordinary difficulties, unless a lumping approach, such as BURTON's (1934), is adopted. As far as West Indian representatives of this genus are concerned, five distinct species have been named (ULICZKA, 1929), all of them synonymized with *C. australiensis* by BURTON. Subsequent records have been attributed rather tentatively by DE LAUBENFELS to *C. cavernosa* (regarded as a senior synonym of *C. australiensis*), some also to ULICZKA's *C. alloclada* and *C. apion*, but without clear evidence supporting such identifications. WIEDENMAYER (1977) has described specimens from Bimini identifying them respectively with ULICZKA's *C. alloclada* and *C. kuekenthali*. The two species, as conceived by WIEDENMAYER, appear neatly distinguishable. None of my specimens shows a set of characters convincingly matching either of WIEDENMAYER's descriptions.

Under the circumstances, and also considering that in regard to my material knowledge of the nature and distribution of the vents is often inadequate, it seems preferable to record the present specimens without attempt of specific identification.

In the descriptions below mention of the triaenes is omitted for brevity, as they are practically always the same. Anatriaenes and protriaenes are always present: they are revealed, even when the cladome is missing in the preparations, by their broken rhabdomes. The anatriaenes have a rhabdome generally reaching 4.5-7 μm of thickness below the cladome, clads well formed, 20-60 μm long. The protriaenes have a thicker rhabdome, reaching about 9-12 μm in the middle and clads mostly irregular and reduced, about 30-70 μm long.

R.N. NC.24

Occurrence: Duncans (Jamaica), fore-reef slope, depth 35 m, 30 March 1964.

The specimen, preserved dry, has shrunk to an unrecognizable shape. It was subspherical, size about 5 cm, colour bright yellow outside and inside, consistency firmly fleshy.

Spicules: 1) Oxeas up to 2800 × 34 μm. Ends moderately stepped down, axial canal narrow or inconspicuously widening at the ends. 2) Microxeas slightly roughened, size 46-87 × 2-2.8 μm, very abundant. 3) Sigmaspires having a chord of 12-17.5 μm.

R.N. NC.31

Occurrence: Duncans (Jamaica), fore-reef slope, depth 35 m, 30 March 1964.

A fragment of a hemispherical sponge about 10 cm in diameter, with sedimented surface, yellow interior, firmly fleshy consistency. Cortex about 3 mm thick.

Spicules: 1) Oxeas up to 4700 × 49 μm. Ends markedly stepped down with axial canal showing successive swellings. 2) Microxeas smooth or with slightly roughened surface, size 95-145 × 2-2.5 μm, rare. 3) Sigmaspires with a chord of 12-17.5 μm.

R.N. BW.9

Occurrence: Bimini (Bahamas), west of laboratory, depth 10 m, 16 March 1964.

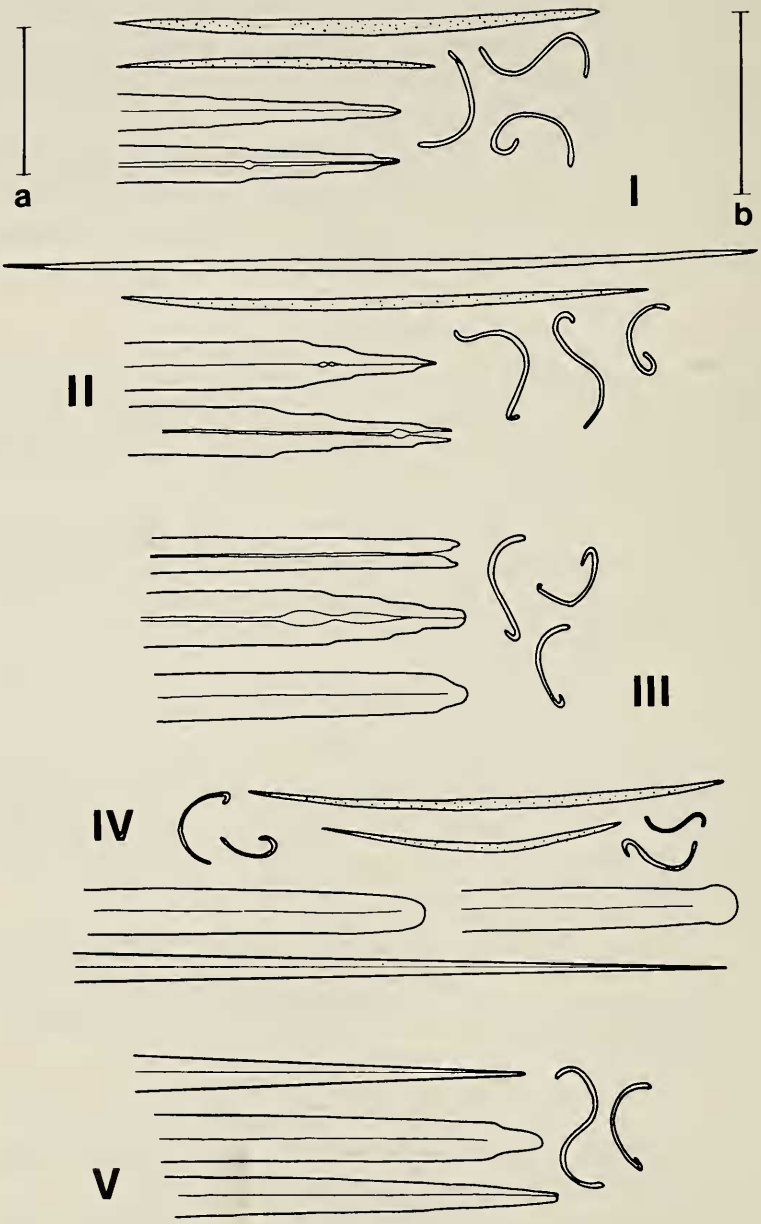
A large fragment of a subspherical sponge measuring about 20 cm. Upper part sedimented, colour in life light orange to bright yellow, interior light bright orange, consistency compact, firmly fleshy. Cortex 4 to 5 mm thick. Calyces sparse.

Spicules: 1) Oxeas up to 2800 × 38 μm. Ends markedly stepped down or shortened with axial canal generally widening. 2) Microxeas smooth, size 85-145 μm, very rare, dubiously proper. 3) Sigmaspires with a cord of 12-17.5 μm.

R.N. BC.70a, b, c

Occurrence: Boca Chica (Dominican Republic), depth 4-5 m, 18 April 1964.

The three specimens are subspherical, respectively 5, 4 and 3.5 cm in diameter. Preserved in formalin, they are a little contracted, their consistency markedly tough, with calyces difficult to recognize. The


a
I
b
II
III
IV
V

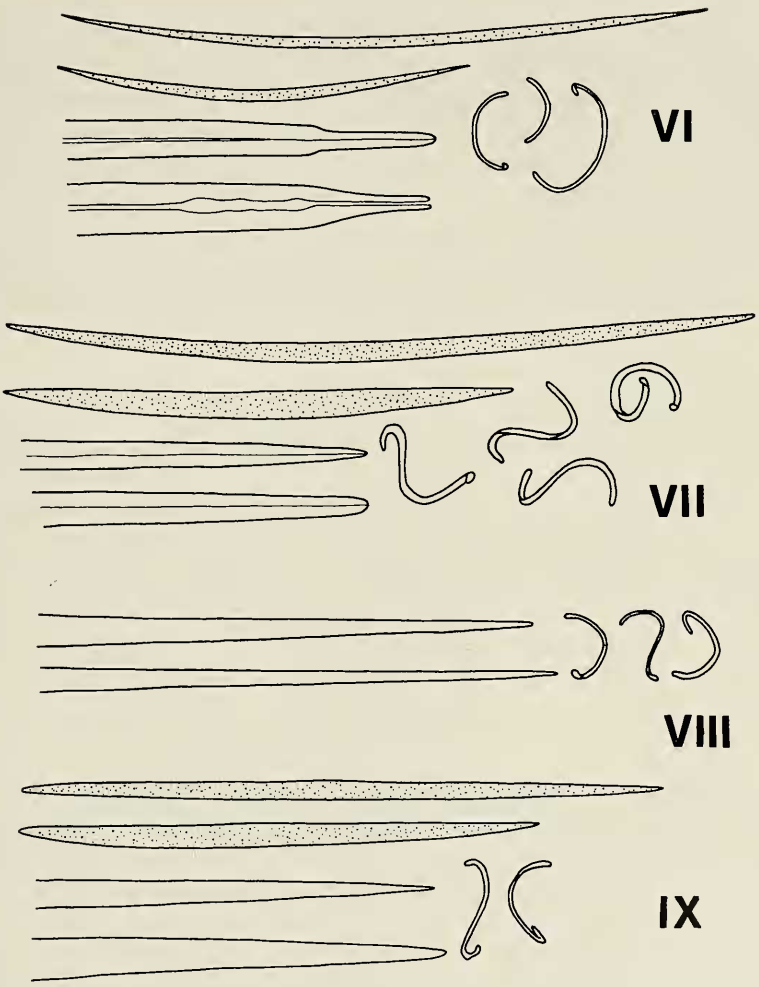


Fig. 16 - Spicules of *Cinachyra* spp. (triaenes omitted). I: NC.24, II: NC.31, III: BW.9, IV: BC.70, V: BC.71, VI: BY.16, VII: KC.6, VIII: LP.11, IX: LP.39. Scale a (ends of macroxeas): 100 μm, scale b (microxeas and sigmaspires): 30 μm.

structure is radiate; there is no notable cortex. A heavy sedimentation of fine calcareous sand made them inconspicuous in the field. The interior colour was bright light yellow. The vents were contracted soon after collection.

Spicules: 1) Oxeas measuring 2800-3800 × 34-40 μm. Extremities very long, uniformly tapering and sharp. Strongylote modification of one end are frequent. The axial canal is narrow. 2) Microxeas observed only in specimen BC.70c. Straight, or slightly curved or slightly bent, they are rough and measure 45-65 × 1.5-2 μm. 3) Sigmaspires with a chord of 7-12 μm, thin.

Two or three mesoanatriaenes of the same size as the anatriaenes (well formed, apparently not teratologic) have been observed. They are here mentioned in case this unusual spicule is found again.

R.N. BY.16a, b, c

Occurrence: Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964.

The specimens are rounded, respectively 8, 8 and 5 cm in diameter, with wide base. In life the colour was yellow, the consistency fleshy and firm, maintained after preservation in formalin. The calyces are numerous, up to 5 mm wide, sparse on the surface except on top, which is a little flattened and, in specimen BY.16a, with a small depression. The cortex is about 2 mm thick. Pedunculated gemmules, about 6 mm high and 2 mm in diameter, have been observed in specimens BY.16a and BY.16b.

Spicules: 1) Oxeas up to 3700 × 37 μm. The ends are moderately stepped down; a widening of the axial canal is not frequent. 2) Microxeas fairly abundant only in specimen BY.16c. Their surface is rough, their size 80-145 × 2 μm. 3) Sigmaspires with a chord of 9-20 μm.

R.N. BC.71

Occurrence: Boca Chica (Dominican Republic), depth 4-5 m, 18 April 1964.

The specimen, preserved in formalin, measures about 7 cm, and is much macerated. Vents are not recognizable; there is no apparent cortex. The colour in life was bright light yellow.

Spicules: 1) Oxeas up to 4700 × 43 μm. The ends are variable,

from very long and sharp to shortened and moderately stepped down; axial canal not widening. 2) Sigmaspires thin, chord 9-21 μm.

R.N. KC.6

Occurrence: Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964.

The specimen, in formalin, is macerated. It was noted as spherical, 7 cm in diameter, with numerous sparse calyces, bright yellow-orange, interior lemon yellow. There is no apparent cortex.

Spicules: 1) Oxeas up to 4200 × 43 μm. The ends are rather regularly fusiform, sometimes rounded; axial canal narrow. 2) Microxeas abundant, conspicuously rough, measuring 72-130 × 2.5-3.5 μm. 3) Sigmaspires thick, with a chord up to 19 μm.

R.N. LP.11

Occurrence: La Parguera (Puerto Rico), mangrove, depth 0.5 m, 3 May 1964.

The specimen is presently in the dry state. It was noted as subspherical, externally and internally yellow, about 2 cm in diameter, with two or three vents 3 mm wide, with elevated rims.

Spicules: 1) Oxeas up to 3800 × 35 μm. Ends very long and sharp. 2) Sigmaspires with a chord of 8.5-15 μm. Microxeas have not been observed.

R.N. LP.39

Occurrence: La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964.

The specimen is much macerated in formalin. Its size is about 7 cm. There is no apparent cortex.

Spicules: 1) Oxeas up to 3800 × 40 μm. The ends are from long and sharp to long and obtuse, some strongylote; there is no stepping down; the canal remains narrow. 2) Microxeas abundant, rough, measuring 80-130 × 2-4 μm. 3) Sigmaspires with a chord of 11-18 μm.

Specimens BC.70a, b and c show some characters which may set them apart from the rest of the material. They are distinguishable at sight (in formalin) for being only slightly contracted and markedly tough. They are characterized by their oxeas ending in very long and sharp points and by the strongylote modifications; further, by their

sigmaspires in the 7-12 μm range. Presence or absence of microxeas might be not a constant character. The specimens may be compared with ULICZKA's *Cinachyra apion* and *C. rhizophyta.*

HADROMERIDA

SUBERITIDAE

Terpios zeteki (Laubenfels)

Laxosuberites zeteki Laubenfels, 1936a: 450

Occurrence: Port Royal (Jamaica), mangrove, depth 0.2-1.5 m, 23 March 1964. R.N. KM.4, KM.5, KM.6, KM.7, KM.10.

Port Royal (Jamaica), on submerged ruins, depth 5-10 m, 27 March 1964. R.N. PR.56, PR.57, PR.58.

La Parguera (Puerto Rico), mangrove, depth 1 m, 18 May 1964. R.N. LP.74, LP.82, LP.83.

The internal colour of the various specimens was dull yellow or orange-yellow; the superficial colour was very variable. KM.4: reddish violet verging to orange-brown; KM.5: dull orange-yellow; KM.6: dull green; KM.7: bluish green; KM.10: light orange-yellow; PR.56,

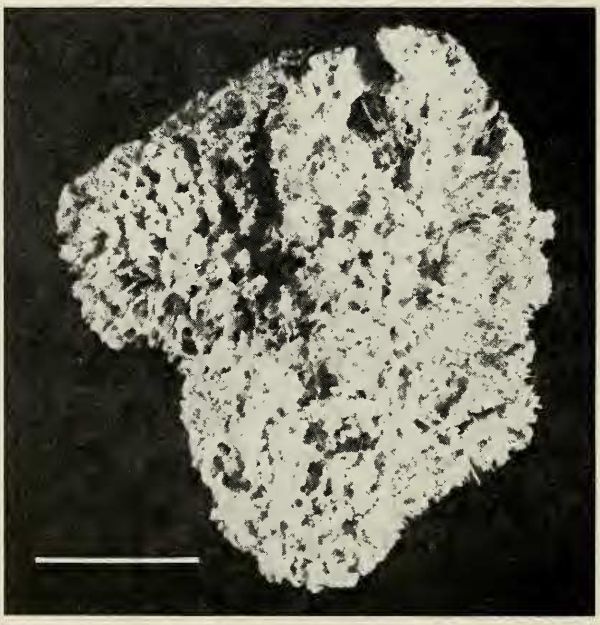


Fig. 17 - *Laxosuberites psammophilus* sp. n., the holotype. Scale: 1.5 cm.

57: carmine to orange; PR.58: yellow to green or violet on tips of branches; LP.74, 82: violet; LP.83: blue verging to orange.

Spicules: Tylostyles measuring 130-750 × 2.5-19 μm.

Laxosuberites psammophilus sp. n. (Fig. 17, 18)

Occurrence: Boca Chica (Dominican Republic), depth 4-5 m, 18 April 1964. R.N. BC.78.
Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964. R.N. BY.14.
Off La Parguera (Puerto Rico), depth 25-30 m, 12 May 1964. R.N. SH.8.

Holotype (BC.78): MSNG 47686

The three specimens are cushion-shaped, 4-5 cm across. The colour in life was orange to orange-yellow. All three incorporate a very large quantity of sand. The skeleton is organized in ascending plumose columns terminating in hispidating spicular brushes.

Spicules: 1) Tylostyles slightly curved, measuring 230-760 × 9-16 μm. 2) Tylostyles slightly curved, measuring 800-1600 × 9-16 μm.

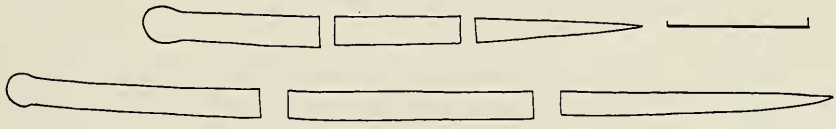


Fig. 18 - Spicules of *Laxosuberites psammophilus* sp. n. Scale: 100 μm.

Polymastiidae

Polymastia tenax sp. n. (Fig. 19, 20)

Occurrence: Sosua (Dominican Republic), depth 7 m, 19 April 1964. R.N. SOS.1.

Holotype: MSNG 47687

The sponge was found inside a shadowed cavity. It was cushion-shaped with close-set, open papillae 10-15 mm high, cream coloured, difficult to tear as tough rubber. Available is a fragment. The choanosomal skeleton is in confusion, extremely dense; the smaller category of spicules forms an ectosomal palizade.

Spicules: 1) Styles measuring 630-770 × 11-14 μm. 2) Subtylostyles measuring 320-420 × 18-30 μm. 3) Subtylostyles measuring 130-330 × 2.5-9 μm.

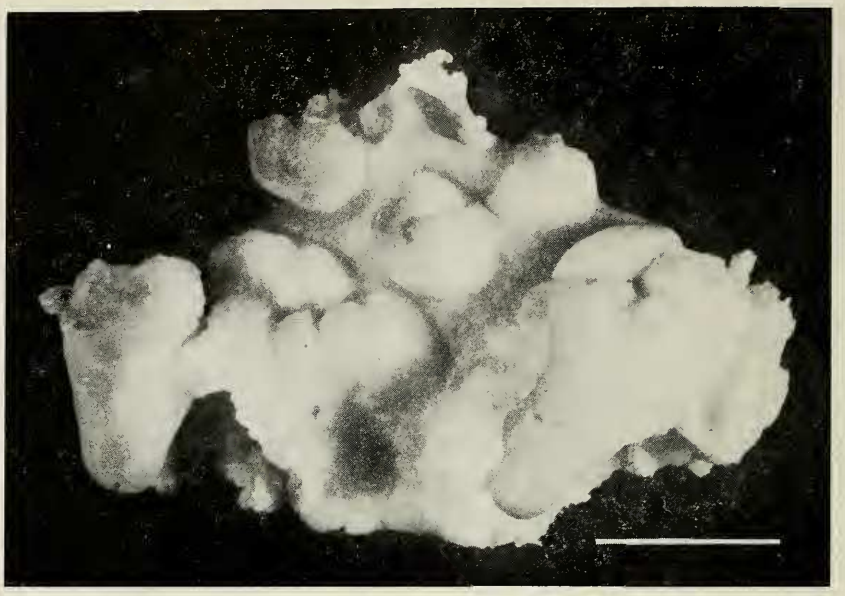


Fig. 19 - *Polymastia tenax* sp. n., the holotype. Scale: 1 cm.

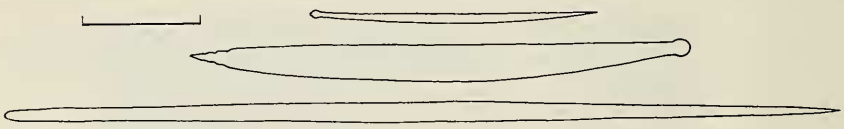


Fig. 20 - Spicules of *Polymastia tenax* sp. n. Scale: 100 μm.

SPIRASTRELLIDAE

Spirastrella cunctatrix Schmidt (Fig. 21)

Spirastrella cunctatrix Schmidt, 1868: 17

Occurrence: Bimini (Bahamas), lagoon, depth 1 m, 16 March 1964. R.N. BL.5.

The specimen is a small, thick encrustation, smooth, brown in life.

Spicules: 1) Tylostyles straight, measuring 300-480 × 3-7 μm. 2) Spirasters measuring in length 7-37 μm, average size 14 μm.

Spirastrella coccinea (Duchassaing & Michelotti) (Fig. 21)

Thalysias coccinea Duchassaing & Michelotti, 1864: 84

Occurrence: Bimini, Rabbit Cay (Bahamas), western shore, depth 2-3 m, 13 March 1964. R.N. RC.12.

S. Domingo, La Caleta (Dominican Republic), depth 2-3 m, 3 April 1964. R.N. SDC.16.

Boca de Yuma (Dominican Republic), depth 1-2 m, 24 April 1964. R.N. BY.1.

RC.12: small, thickly encrusting, red in life.

SDC.16: encrusting on bivalve, red in life.

BY.1: cushion-shaped; fleshy, cream in formalin.

Spicules: 1) Tylostyles straight, measuring 340-685 × 3.5-9.5 μm. 2) Spirasters measuring in length 9-48 μm, average size 25 μm.

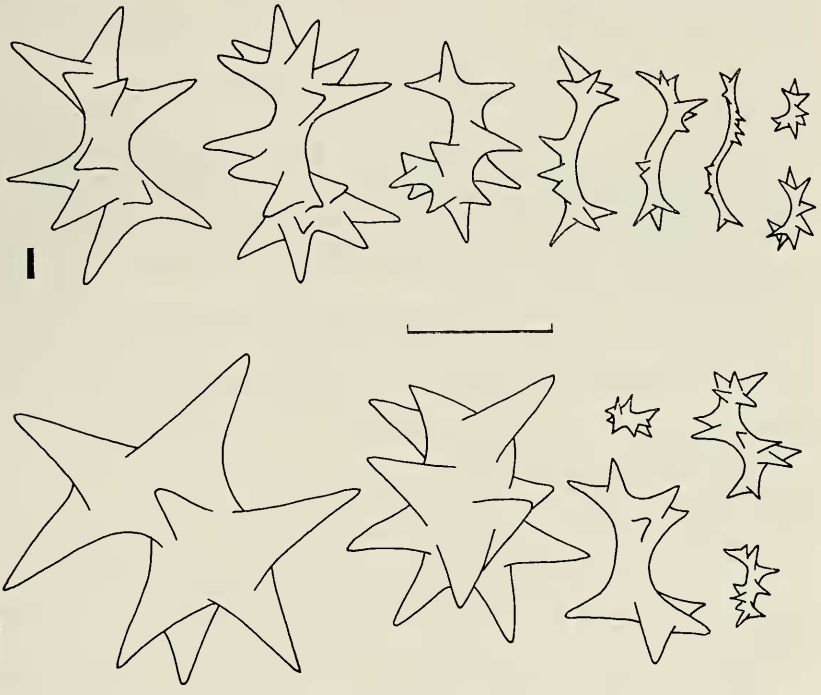


Fig. 21 - Microscleres of *Spirastrella cunctatrix* (I, specimen BL.5) and of *Spirastrella coccinea* (II, specimen RC.12). Scale: 20 μm.

Spirastrella spinispirulifera (Carter)

Suberites spinispirulifer Carter, 1879: 345

Occurrence: Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964. R.N. BY.22.

A fragment of a massive specimen is available. The colour in life was grey-drab-violaceous, not uniform, the interior was tan-dull yellow;

in formalin it is greenish. The consistency is weak, friable; a very large quantity of sand is included in the choanosome. The surface is uneven. Several oscules, 2 to 5 mm wide, are grouped. Pores are numerous, 150-300 μm wide.

Spicules: 1) Tylostyles to subtylostyles straight or slightly curved, measuring 150-450 × 8.5-9.5 μm. 2) Spinispires with a chord of 15-26 μm.

Anthosigmella varians (Duchassaing & Michelotti)

Thalysias varians Duchassaing & Michelotti, 1864: 86

Occurrence: La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964. R.N. LP.20, LP.100.
Punta Salinas (Dominican Republic), depth 4 m, 4 April 1964. R.N. SDS.6.
Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.28.
Bimini (Bahamas), lagoon, depth 1 m, 16 March 1964. R.N. BL.4.
Bimini (Bahamas), west coast, depth 10 m, 14 March 1964. R.N. BW.6.
Off La Parguera (Puerto Rico), drop-off, depth 35 m, 12 May 1964. R.N. SH.18b.
La Caleta, S. Domingo (Dominican Republic), depth 1-3 m, 3 April 1964. R.N. SDC.1.
Rabbit Cay, Bimini (Bahamas), depth 2-3 m, 13 March 1964. R.N. RC.5.
Boca Chica (Dominican Republic), depth 30-40 m, 15 April 1964. R.N. BC.63.

LP.20: cushion-shaped with conical processes bearing an oscule at the top. Colour in life yellowish brown, lighter around the oscules.

LP.100: encrusting, brown.

SDS.6: massive, repent, brownish yellow.

KC.28: irregularly cylindrical, diameter 1 cm, olive-brown.

BL.4: spreading, with low conical processes bearing on top an oscule 1-2 cm wide. Some processes are higher, irregularly cylindrical. Colour: mustard.

BW.6: extensive, with conspicuous large oscules which become scarcely apparent after collection. Yellowish brown.

SH.18b: encrusting on the upper surface of a foliaceous unifacial coral of the genus *Agaricia* growing outward in a horizontal plane from vertical face of rock. In the living state, conspicuous subdermal canals leading to a wide central oscule were observed. The sponge was boring, with notable destructive power. (The underside of the coral was encrusted by *Merlia normani*).

SDC.1: extensive, thickly encrusting with irregular conical eminences, brown.

RC.5: extensive, encrusting and boring in limestone pavement, yellowish brown.

BC.63: thickly encrusting, tough, irregular, dull violet.

The consistency of the preserved specimens is moderately firm and crumbling; the colour is uniformly middle-brown (C.C.134).

Spicules: 1) Tylostyles straight or moderately curved, measuring 270-480 × 7-13 μm. 2) Anthosigmas with a chord of 9-21 μm. 3) Spirasters irregular, measuring 5-21 μm. The microscleres are rare in some specimens.

Spheciospongia vesparium (Lamarck)

Alcyonium vesparium Lamarck, 1814: 78

Occurrence: S. Domingo, La Caleta (Dominican Republic), depth 2-4 m, 3 April 1964. R.N. SDC.12, SDC.13.
Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964. R.N. BY.34, BY.35.
Off La Parguera (Puerto Rico), edge of drop-off, depth 20 m, 12 May 1964. R.N. SH.16.
Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.29.
Sosua (Dominican Republic), depth 30 m, 19 April 1964. R.N. SOS.4.
Bimini (Bahamas), west coast, depth 10 m, 14 March 1964. R.N. BW.5, BW.7.
Bimini (Bahamas), lagoon, depth 1 m, 16 March 1964. R.N. BL.15, BL.18.

Most of the available specimens are fragments of very large, cake-shaped individuals. The colours mentioned below were noted in life.

SDC.12: heavily sedimented, interior greyish-bluish-black. Oscules on top, grouped, 1-2 cm in diameter.

SDC.13: colour inside and outside tan.

BY.34: interior dark blue.

BY.35: atrial aperture on top 6 cm wide, cribriform openings on entire surface.

SH.16: light dull yellow outside and inside. Atrium 4 cm wide. The surface is densely speckled by a zoanthid.

KC.29: bluish-greenish-black.

SOS.4: dull yellowish brown.

NL.15: small specimen, bluish black.

Spicules: 1) Tylostyles rarely straight, curved or slightly sinuous, measuring 300-465 × 6.5-13 μm. 2) Spirasters measuring 9-20 μm. They may be rare in some preparations.

Spheciospongia cuspidifera (Lamarck) (Fig. 22, 23)

Alcyonium cuspidiferum Lamarck, 1815: 168
Spirastrella cuspidifera: Topsent, 1933: 41
Xestospongia tierneyi: Wiedenmayer, 1977: 117

Occurrence: Boca Chica (Dominican Republic), depth 4-5 m, 18 April 1964. R.N. BC.72.
Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964. R.N. BY.20, BY.21, BY.30.
Sosua (Dominican Republic), depth 20-30 m, 19 April 1964. R.N. SOS.3.

The sponge is irregularly massive or in the form of long, erect, hollow subcylindrical processes closed at their extremity. The interior is always extremely cavernous. The colour in life is yellowish brown

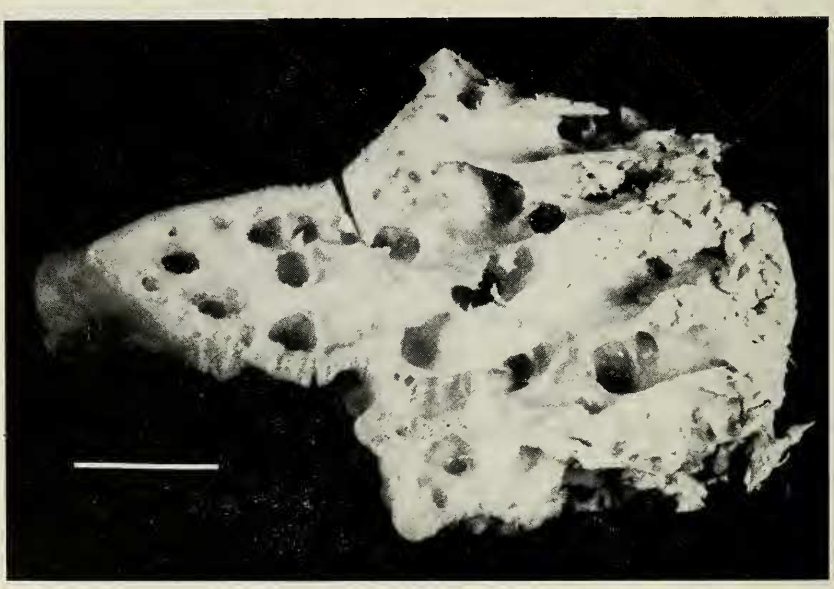


Fig. 22 - *Spheciospongia cuspidifera* (Lamarck). Section of specimen BC.72. Scale: 2 cm.

externally, cream internally. The colour of the formalin-preserved specimens is dull orange-yellow (C.C.246). The oscules are 2 to 3 mm wide, in clusters. The pores are close-set, about 200 μm wide. The consistency is firm, cartilagineous. There is a compact cortex not neatly separated from the choanosome. The spiculation is in confusion, very dense; a prevalently radial course is observable at the very surface.

Spicules: 1) Strongyles to subtylostrongyles measuring 200-530 × 4.5-11.5 μm, curved or sinuous, rarely straight. Either form may predominate in different specimens. 2) Spirasters measuring 9-14 μm.

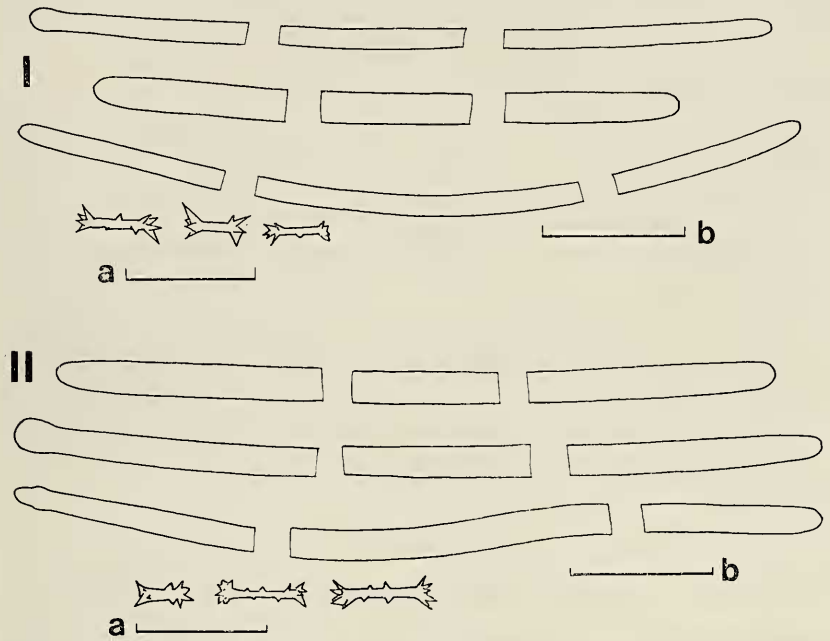


Fig. 23 - Spicules of *Spheciospongia cuspidifera* (Lamarck). I: specimen BC.72, II: specimen BY.20. Scale a: 20 μm, scale b: 50 μm.

This is the sponge recorded as *Xestospongia tierneyi* by WIEDENMAYER, the identity of which with the *Alcyonium cuspidiferum* of Lamarck has been firstly suggested by Prof. HARTMAN and by Dr. RUETZLER (personal communication).

CLIONIDAE

Cliona aprica Pang

Cliona aprica Pang, 1973: 42

Occurrence: La Parguera (Puerto Rico), depth 2 m, 3 May 1964. R.N. LP.7.

The specimen is boring in dead coral (*Acropora palmata*). The sponge, thickly overgrowing the substrate, was noted as olive-drab superficially, yellowish inside the excavations.

Spicules: 1) Tylostyles measuring 260-300 × 7-9.5 μm. They are straight or slightly curved, thickest at the middle of the shaft, the tyle is spherical, the point long and sharp. 2) Spirasters spiny, spiral with two to four bends, 14-25 μm long, thin.

Cliona delitrix Pang

Cliona delitrix Pang, 1973: 28

Occurrence: Rabbit Cay, Bimini (Bahamas), depth 2-3 m, 19 March 1964. R.N. RC.23.
Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.17a, KC.31.

RC.23: boring in *Montastrea cavernosa*. Bright red at the surface and internally. Two oscules 1 cm wide, closing upon collection. Tylostyles 230-330 × 2.5-7 μm.

KC.17a: boring in a massive coral. Encrusting surface orange-red dotted by grey zoanthid, interior orange-yellow. Tylostyles 180-325 × 4.5-9.5.

KC.31: boring in a massive specimen of *Siderastrea* sp. Orange-red. Tylostyles 180-345 × 4.5-9.5 μm.

Tethyidae

Tethya cripta (Laubenfels) (Fig. 24)

Cryptotethya cripta Laubenfels, 1949: 20

Occurrence: S. Domingo, La Caleta (Dominican Republic), depth 2-3 m, 3 April 1964. R.N. SDC.10.
Bimini (Bahamas), west coast, depth 10 m, 14 March 1964. R.N. BW.4.

Two fragments of large specimens are available, macerated in formalin. The colour in life was dull greenish, the surface much sedimented, the consistency firm, easy to cut. The choanosome contains much sand.

Spicules: 1) Strongyloxeas measuring 500-1500 × 7-27 μm. 2) Oxyasters to very irregular spheroxyasters with a diameter of 23-35 μm. 3) Strongylasters with a diameter of 8-11.5 μm, rays crenulated.

Tethya aurantium (Pallas) (Fig. 25)

Alcyonium aurantium Pallas, 1766: 357

Occurrence: S. Domingo, La Caleta (Dominican Republic), depth 2 m, 3 April 1964. R.N. SDC.11.
La Parguera (Puerto Rico), depth 0.5 m, 9 May 1964. R.N. LP.55.

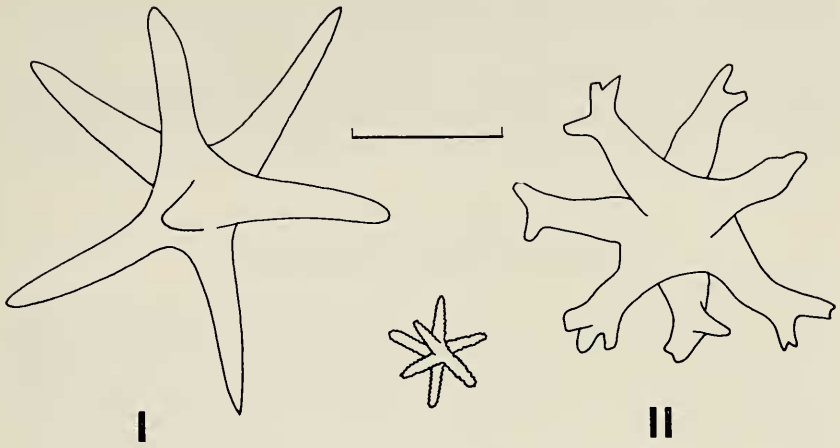


Fig. 24 - Microscleres of *Tethya cripta* (Laubenfels). I: from specimen SDC.10, II: from specimen BW.4. Scale: 20 μm.

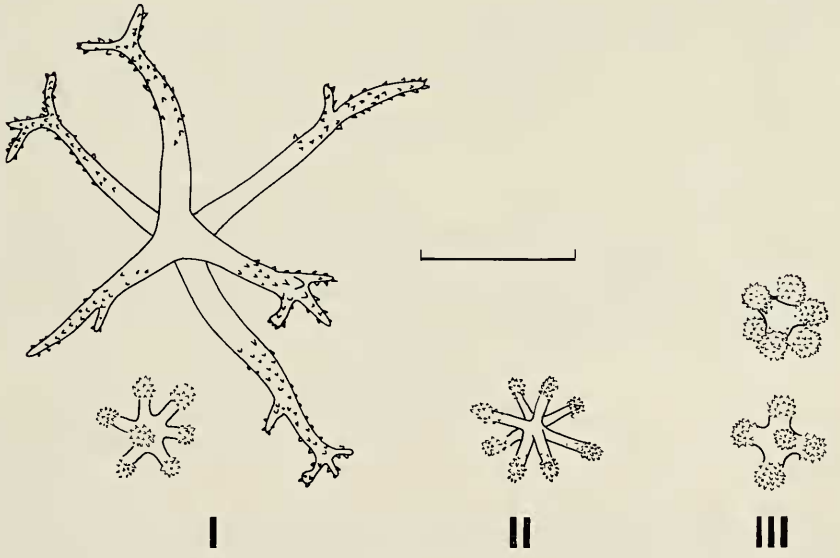


Fig. 25 - Micrasters of *Tethya diploderma* (I), *Tethya aurantium* (II) and *Tethya* sp. (III). Scale: 20 μm.

SDC.11: diameter 5 mm, light bright orange. LP.55: diameter 17 mm, orange.

Spicules: 1) Strongyloxeas measuring 350-1400 × 5-20 μm. 2) Spherasters with a diameter up to 60 μm. 3) Microasters with strongylote to tylote rays, spined at the extremities, with a diameter of 9-14 μm.

Tethya diploderma Schmidt (Fig. 25)

Tethya diploderma Schmidt, 1870: 52

Occurrence: La Parguera (Puerto Rico), depth 1.5 m, 9 May 1964. R.N. LP.61.
La Parguera (Puerto Rico), mangrove, depth 0.5-1 m, 18 May 1964. R.N. LP.79.
Port Royal (Jamaica), pylons and wall of wharf, depth 1-6 m, 23 March 1964. R.N. PR.7, PR.16.
Port Royal (Jamaica), submerged ruins, depth 5-10 m, 27 March 1964. R.N. PR.62.

LP.61: very abundant, mostly on dead *Porites*, bright green externally, yellow internally, size 2-4 cm, oscules 2-4 mm wide. Tinges formalin green.

LP.79: abundant on the muddy bottom attached to fragments of shells, emerald green, oscules up to 6 mm wide, with elevated rim. The green colour disappears in spirit.

PR.7: with gemmules, colour dark violet, interior yellow.

PR.16: very small, wine coloured, interior orange-yellow.

PR.62: two coalescent individuals, with gemmules. Colour orange-red to reddish violet.

Spicules: 1) Strongyloxeas measuring 400-1500 × 5-27 μm. 2) Spherasters up to 70 μm in diameter, the ray to centrum ratio is 0.7-0.8. 3) Oxyasters with a diameter of 25-57 μm, rays variously contorted, spined, branching. 4) Tylasters with a diameter of 7-11 μm, tyles spined.

Tethya sp. (Fig. 25)

Occurrence: Port Royal (Jamaica), wall of wharf, depth 1-6 m, 23 March 1964. R.N. PR.1.

The specimen had a diameter of 25 mm; the colour in life was not uniform, orange-red to orange-yellow; gemmules were well developed.

Spicules: 1) Strongyloxeas measuring 300-2000 × 5-27 μm.

2) Spherasters with a diameter up to 80 μm. The ratio of ray to centrum is about 0.4. 3) Tylasters spined, 8-11.5 μm in diameter.

This sponge does not appear identifiable with a known species owing to the peculiar form of its microsters.

Chondrosiidae

Chondrilla nucula Schmidt

Chondrilla nucula Schmidt, 1862: 39

Occurrence: Bimini (Bahamas), lagoon, depth 0.5-1 m, 16 March 1964. R.N. BL.11b.

La Parguera (Puerto Rico), mangrove, depth 0.5-1 m, 18 May 1964. R.N. LP.86.

La Parguera (Puerto Rico), outer reef slope, depth 5-17 m, May 1964. R.N. LP.23, LP.89.

La Parguera (Puerto Rico), from the contents of the stomach of a turtle *Eretmochelys imbricata* captured by Dr. D.S. Erdman, May 1964. R.N. LP.102.

Staniel Cay, Exumas (Bahamas), cave, 3 March 1963. R.N. 1117, 1124.

Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.15.

Port Royal (Jamaica), wharf pilings, depth 1-6 m, 23 March 1964. R.N. PR.12.

Rabbit Cay, Bimini (Bahamas), depth 2-3 m, 13 March 1964. R.N. RC.9, RC.10.

BL.11b: growing on *Stelletta pudica* (BL.11a). Spherasters 16-27 μm.

LP.86: various specimens on mangrove roots, also free on the muddy bottom. Colour in life very variable: light olive, bluish, violaceous, cream. Spherasters 20-29 μm.

LP.102: spherasters 29-37 μm.

1117: spherasters 28-38 μm.

1124: spherasters 27-44 μm.

KC.15: colour in life olive. Spherasters 14-25 μm.

LP.23: colour in life violet. Spherasters 22-30 μm.

PR.12: colour in life olive-brown to cream. Spherasters 24-37 μm.

RC.9: on back of crab. Spherasters 18-26 μm.

RC.10: spherasters 18-30 μm.

LP.89: spherasters 23-38 μm.

Chondrosia collectrix (Schmidt)

Cellulophana collectrix Schmidt, 1870: 25

Occurrence: Port Royal (Jamaica), wharf pilings, depth 1-6 m, 23 March 1964. R.N. PR.9.

The specimen is small, irregularly cushion-shaped, tough but easy to cut. The colour in life was variable, from violaceous black to greyish white. The colour in formalin is dark violaceous brown externally, lighter internally. There is no cortex. The sponge contains a very limited amount of foreign matter.

Chondrosia reniformis Nardo

Chondrosia reniformis Nardo, 1847: 272

Occurrence: Staniel Cay, Exumas (Bahamas), depth 1 m, 3 March 1963. R.N. 1119.

Available is part of a large massive sponge. The surface is glistening and slippery (in formalin); there is an oscule 4 mm wide, with raised margin, probably much larger in life. The cortex, quite distinct, is up to 8 mm thick. The colour is presently orange (C.C.186 outside, C.C.205 inside). The sponge was extremely difficult to cut: its consistency was – and still is – as that of vulcanized rubber.

The present identification and the one above of *Chondrosia collectrix* follow WIEDENMAYER's treatment (1977: 188). They are, however, regarded as provisional, pending a revision of the genus which still appears necessary.

PLACOSPONGIIDAE

Placospongia carinata (Bowerbank)

Geodia carinata Bowerbank, 1858: 308, 314

Occurrence: Port Royal (Jamaica), wharf pylons and wall, depth 1-6 m, 23 March 1964. R.N. PR.8, PR.15.

Colour in life reddish orange-brown externally, orange-yellow internally. Colour in formalin chocolate brown.

Spicules: 1) Tylostyles choanosomal measuring 800-1100 × 11-21 μm. 2) Tylostyles ectosomal measuring 180-450 × 4.5-9 μm. 3) Selenasters measuring 60-74 μm when fully developed. 4) Spirasters 13-26 μm. 5) Microspires very variable measuring for the most part 4.5-9 × 1.5-2.3 μm. The longer ones (up to 14 μm) are slightly twisted and spined; the shorter ones, smooth and comparatively thick, are often oval and may tend toward a spherical shape about 2.3 μm in diameter.

Timeidae

Timea unistellata (Topsent) (Fig. 26)

Hymedesmia unistellata Topsent, 1892: XXVII

Occurrence: S. Domingo, La Caleta (Dominican Republic), depth 2 m, 3 April 1964. R.N. SDC.14.

The specimen is a thin encrustation on a bivalve, white in the dry state.

Spicules: 1) Tylostyles straight, measuring 230-280 × 3-4.5 μm. 2) Spherasters with a diameter of 20-25 μm, rays moderately variable as to number and length, with sparse spines.

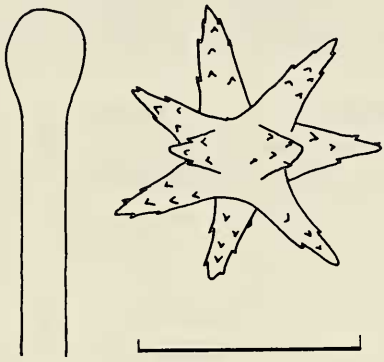


Fig. 26 - *Timea unistellata* (Topsent). Spicules of specimen SDC.14. Scale: 20 μm.

EPIPOLASIDA

Epipolasidae

Aponastra modesta sp. n. (Fig. 27)

Occurrence: Port Royal (Jamaica), submerged ruins, depth 5-7 m, 27 March 1964. R.N. PR.44.

Holotype: MSNG 47688

The specimen in life was dark grey outside and greenish grey inside. It was compressible, elastic, with a velvety surface. Preserved in formalin, it is middle brown, very soft. The shape is not definable and oscules are not recognizable. The skeleton consists of oxeas part in

confusion, part in non continuous, irregular bundles. At the surface the latter are arranged tangentially and form a rather regular network with meshes 180-280 μm wide, quite conspicuous under a lens. The microrhabds are scattered.

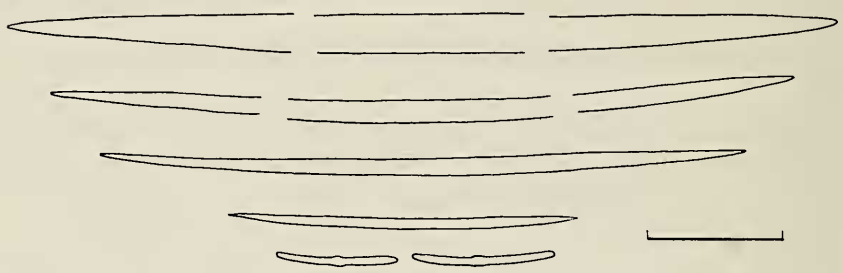


Fig. 27 - Spicules of *Aponastra modesta* sp. n. Scale: 50 μm.

Spicules: 1) Oxeas of all sizes between 120 and 600 μm, straight or slightly curved, with long, well-formed points. Their diameter, directly proportional to length, is between 4.5 and 12 μm. 2) Microstrongyles slightly curved, smooth, with a very faint but constant central swelling. They measure from 35 × 2.5 μm to 50 × 3 μm.

AXINELLIDA

AXINELLIDAE

Pseudaxinella lunaecharta (Ridley & Dendy)

Axinella lunaecharta Ridley & Dendy, 1886: 481

Occurrence: Bimini (Bahamas), west coast, depth 10 m, 16 March 1964. R.N. BW.12.

Boca Chica (Dominican Republic), superficial cave, depth 3 m, 11 April 1964. R.N. BC.4.

Boca Chica (Dominican Republic), depth 7-8 m, 12 April 1964. R.N. BC.45.

Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964. R.N. BY.11.

BW.12: massive, firm, oscules numerous, sparse, 3 mm wide. Surface tuberculated. Brilliant red in life, giving off mucus.

BC.4: massive, conical, firm, oscules on crest. Brilliant red, internally orange-red in life.

BC.45: massive with lobate processes. Oscules 5 mm wide aligned on crests. Brilliant red, internally orange-red in life. A yellow zoanthid on the surface.

BY.11: cushion-shaped, firm. Brilliant red in life, gave off mucus in formalin.

Spicules: 1) Styles curved, measuring 260-350 × 9-16 μm. 2) Oxeas curved, measuring 230-360 × 11-16 μm.

Homaxinella rudis (Verrill)

Axinella rudis Verrill, 1907: 341

Occurrence: Bimini (Bahamas), west coast, depth 10 m, 14 March 1964. R.N. BW.1.

The specimen consists of an erect cylindrical stalk successively dividing into cylindrical branches having a diameter of 10-15 mm. The height of the specimen is 25 cm. The colour in life was red; it is cream after preservation in formalin. The consistency is firm and flexible. The surface is markedly verrucose, with warts being 2-3 mm high and as much apart.

Spicules: Styles uniformly curved, measuring 220-250 × 9-14 μm.

Ptilocaulis spiculifer (Lamarck)

Spongia spiculifera Lamarck, 1813: 449

Pandaros walpersii Duchassaing & Michelotti, 1864: 90

Occurrence: S. Domingo, La Caleta (Dominican Republic), depth 3-4 m, 3 April 1964. R.N. SDC.6.
Punta Salinas (Dominican Republic), depth 4 m, 4 April 1964. R.N. SDS.13.
Boca Chica (Dominican Republic), depth 5 m, 18 April 1964. R.N. BC.106.
Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964. R.N. BY.12.
La Parguera (Puerto Rico), depth 10 m, 6 May 1964. R.N. LP.33.

SDC.6: several specimens, form variable, narrow base, lobate; digitate, also flabellate. Bright red in life.

SDS.13: stalked, with flattened branches, brilliant red in life.

BC.106: lobate and digitate from narrow point of attachment. The colour of the dry specimen is dull brick-red.

BY.12: flabellate, red in life.

LP.33: cylindrical, 12 cm high, 12 mm in diameter.

Spicules: 1) Styles curved, measuring 260-300 × 9-20 μm. 2) Styles slightly curved, sometimes slightly tylote, measuring 500-750 × 9-12 μm.

I have been able to examine the two type specimens of *Pandaros walpersii* Duchassaing & Michelotti which are kept at the museums of

Turin and Genoa respectively. Their structure and spiculation (styles measuring 260-315 × 11.5-16 and 600-900 × 7-9, the latter often slightly tylote) show their identity with the circumtropical *Ptilocaulis spiculifer*.

Desmoxyidae

Higginsia strigilata (Lamarck)

Spongia strigilata Lamarck, 1813: 450

Occurrence: La Parguera (Puerto Rico), depth 4-7 m, 6 May 1964. R.N. LP.47.

Only a spicule slide is presently available.

Spicules: 1) Oxeas measuring 370-530 × 9-26 μm. 2) Styles measuring 1200-1400 × 12-15 μm, rare in my preparation. 3) Oxeas flexuous measuring 270-540 × 2.5-4.5 μm. 4) Microacanthoxeas measuring 40-160 × 4.5-8 μm (spines included).

Myrmekioderma styx Laubenfels (Fig. 28)

Myrmekioderma styx Laubenfels, 1953: 523

Occurrence: Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964. R.N. BY.27.

The specimen was cushion-shaped, of firm consistency, orange-yellow outside and inside. It is heavily sedimented and contains a very

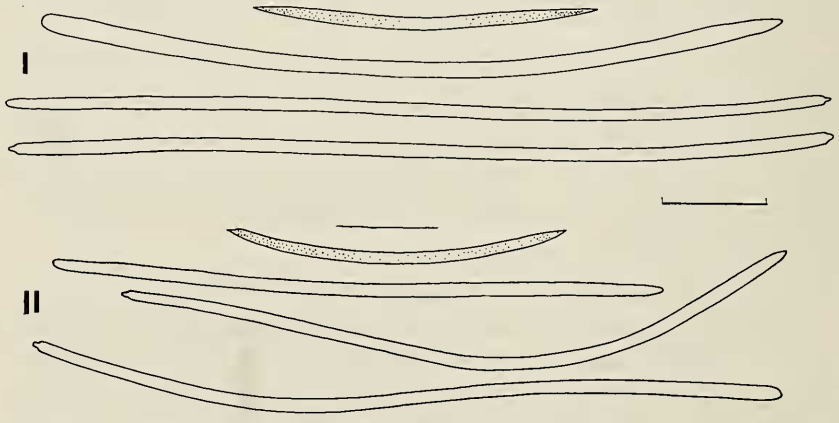


Fig. 28 - *Myrmekioderma styx* Laubenfels. Spicules from the holotype USNM 23400 (I) and from specimen BY.27 (II). Scale: 100 μm.

large quantity of foreign material consisting exclusively of calcareous sand.

Spicules: 1) Strongyles straight, curved or slightly sinuous, measuring 600-840 × 9-11.5 μm. Their extremities are generally uneven, stepped down or mucronated. 2) Acanthoxeas curved, measuring 300-390 × 7-10 μm. The spines are very minute and sparse, becoming denser toward the extremities. 3) Raphides straight or curved, about 60 μm long, extremely thin, inconspicuous.

Raspailiidae

Ectyoplasia ferox (Duchassaing & Michelotti) (Fig. 29, 30)

Amphimedon ferox Duchassaing & Michelotti, 1864: 81

Occurrence: Off La Parguera (Puerto Rico), drop-off, depth 20-25 m, 12 May 1964. R.N. SH.32.

S. Domingo, La Caleta (Dominican Republic), depth 2 m, 3 April 1964. R.N. SDC.8, SDC.15.

Duncans (Jamaica), fore reef slope, depth 35-40 m, 30 March 1964. R.N. NC.18.

Atholl Island, New Providence (Bahamas), depth 1-3 m, 2 February 1963. R.N. 1092.

Punta Salinas (Dominican Republic), depth 4 m, 4 April 1964. R.N. SDS.9.

Punta Magdalena (Dominican Republic), superficial cave, depth 2-3 m, 11 April 1964. R.N. BC.13.

Boca Chica (Dominican Republic), depth 20 m, 12 April 1964. R.N. BC.39, BC.103.

SH.32: 4-5 cm thick, compressible and fragile, with round oscules 5 mm wide on processes 2-3 cm high. Brown outside, yellow-brown inside.

SDC.8: encrusting. Yellowish brown.

SDC.15: inelastic, fragile, yellowish brown outside, dull orange inside.

NC.18: slightly elastic, mucous, brown outside, dull orange inside.

1092: cushion-shaped, firm, large oscules on conical elevations, bright orange-red, lighter internally.

SDS.9: orange-yellow.

BC.13: cushion-shaped, soft, fragile, brownish yellow.

BC.39: massive, with some oscular processes, friable, reddish brown, interior dull orange.

Spicules: 1) Styles slightly curved, measuring 260-330 × 10-14 μm. 2) Styles curved, measuring about 250 × 4-6 μm. They are

Fig. 29 - The type of *Amphimedon ferox* D. & M. (Museo ed Istituto di Zoologia Sistematica, Turin).

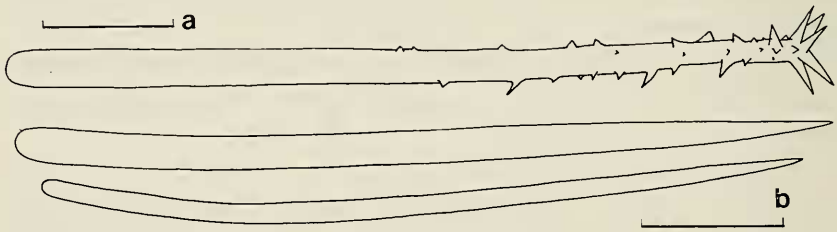


Fig. 30 - Spicules from the type of *Amphimedon ferox* D. & M. Scale a: 20 μm, scale b: 50 μm.

rarer than the larger ones. 3) Acanthostyles characteristic, measuring 100-140 × 4.5-5 μm.

Echinodictyum lugubre (Duchassaing & Michelotti) (Fig. 31)

Pandaros lugubris Duchassaing & Michelotti, 1864: 89

Occurrence: Port Royal (Jamaica), submerged ruins, depth 5-10 m, 27 March 1964. R.N. PR.42.

The specimen is a part, 10 cm high and 5 cm wide, of a large, branching, erect sponge. It was noted in life as hard, inelastic, blackish brown, with a mustard colour internally. The fragment, in formalin, is hard, scarcely resilient, pinkish cream. The skeleton is a coarse reticulation of strong and hard spiculo-fibres 40-300 μm in diameter, forming meshes 200-1500 μm wide. The fibres are entirely filled by longitudinally and thickly arranged oxeas which are joined by colourless spongin. They are echinated by perpendicular acanthosubtylostyles.

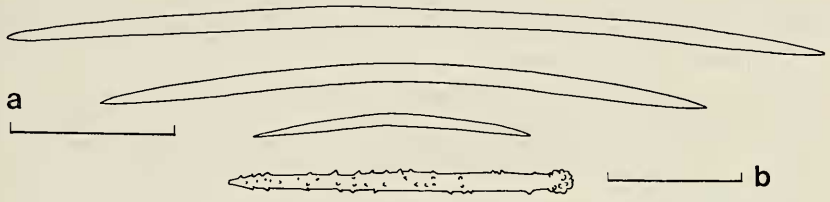


Fig. 31 - *Echinodictyum lugubre* (D. & M.). Spicules from specimen PR.42. Scale a: 100 μm, scale b: 50 μm.

Spicules: 1) Oxeas curved, measuring 170-520 × 5.5-14 μm. 2) Acanthosubtylostyles measuring 110-140 × 7-9 μm. They are scarcely spined and have a blunt point.

Agelasidae

Agelas dispar Duchassaing & Michelotti (Fig. 32)

Agelas dispar Duchassaing & Michelotti, 1864: 76

Occurrence: Duncans (Jamaica), drop-off, depth 35 m, 30 March 1964. R.N. NC.16, NC.22.

S. Domingo, La Caleta (Dominican Republic), depth 3 m, 3 April 1964. R.N. SDC.9.

Sosua (Dominican Republic), depth 10-20 m, 19 April 1964. R.N. SOS.6.

Boca Chica (Dominican Republic), depth 30-40 m, 15 April 1964. R.N. BC.62.

Off La Parguera (Puerto Rico), drop-off, depth 25-30 m, 12 May 1964. R.N. SH.25.

NC.16: fragment of enormous, vasiform specimen. Colour in life brown, interior tan. Oscules 2-5 mm wide, sparse; clusters of smaller ones, about 1 mm wide; irregular invaginations.

NC.22: fragment of large specimen. Colour in life light brown, interior tan. Oscules 2-4 mm wide, sparse; smaller ones in groups, 1-1.5 mm wide; short invaginations contort, 1-2 mm wide.

SDC.9: massive, rounded, 5 cm across. Colour in life violet-brown. Oscules 3 mm wide, sparse; smaller ones in groups, 1-1.5 mm wide; short grooves contort, 1-2 mm wide.

SOS.6: massive, rounded, 6 cm across. Colour in life brown. Oscules 1 to 5 mm wide, also irregular wide openings and deep grooves.

BC.62: fragment of erect, thickly lamellate sponge. Colour in life violet-brown. Oscules 2-4 mm wide, sparse; smaller ones in groups, 1-1.5 mm wide.

SH.25: fragment of large specimen. Colour in life violet-brown, interior cream to tan. Oscules 2-4 mm wide, numerous; smaller ones, 1 to 1.5 mm wide, in clusters.

All these specimens are markedly cavernous. Preserved in formalin, they all have the same middle-brown colour. The amber-coloured fibres, 30-80 μm thick, are irregularly echinated, the main ones also more or less cored.

Spicules: verticillated acanthostyles straight or very slightly curved, measuring 80-150 × 5-11 μm. They have 8 to 12 whorls of 3 to 6 spines each. Near the point there are generally one or two isolated spines. From the base, often, but not always, a few spines project obliquely.

Agelas conifera (Schmidt) (Fig. 32)

Chalinopsilla conifera Schmidt, 1870: 60

Occurrence: Boca Chica (Dominican Republic), depth 20 m, 12 April 1964. R.N. BC.36.
Duncans (Jamaica), drop-off, depth 35 m, 30 March 1964. R.N. NC.35, NC.36.
Off La Parguera (Puerto Rico), drop-off, depth 25-35 m, 12 May 1964. R.N. SH.28.

BC.36: fragment of a repent, irregular sponge. Its colour in life was not uniform, from brown to orange-brown to yellow-brown. There are a few round oscules, 6-8 mm in diameter on low lobate elevations, crowded smaller ones up to 1.5 mm wide, also two elongated invaginations about 8 mm long and less than 1 mm wide.

NC.35: fragment of a cylindrical sponge, 3 cm in diameter. Its colour in life was bright orange-red. There are sparse round oscules 5-6 mm in diameter and crowded smaller ones up to 1.5 mm wide. The pores are crowded, 90-180 μm in diameter.

NC.36: fragment of a large, erect, irregularly subcylindrical, branching sponge. Its colour in life was light brick-orange. The larger oscules

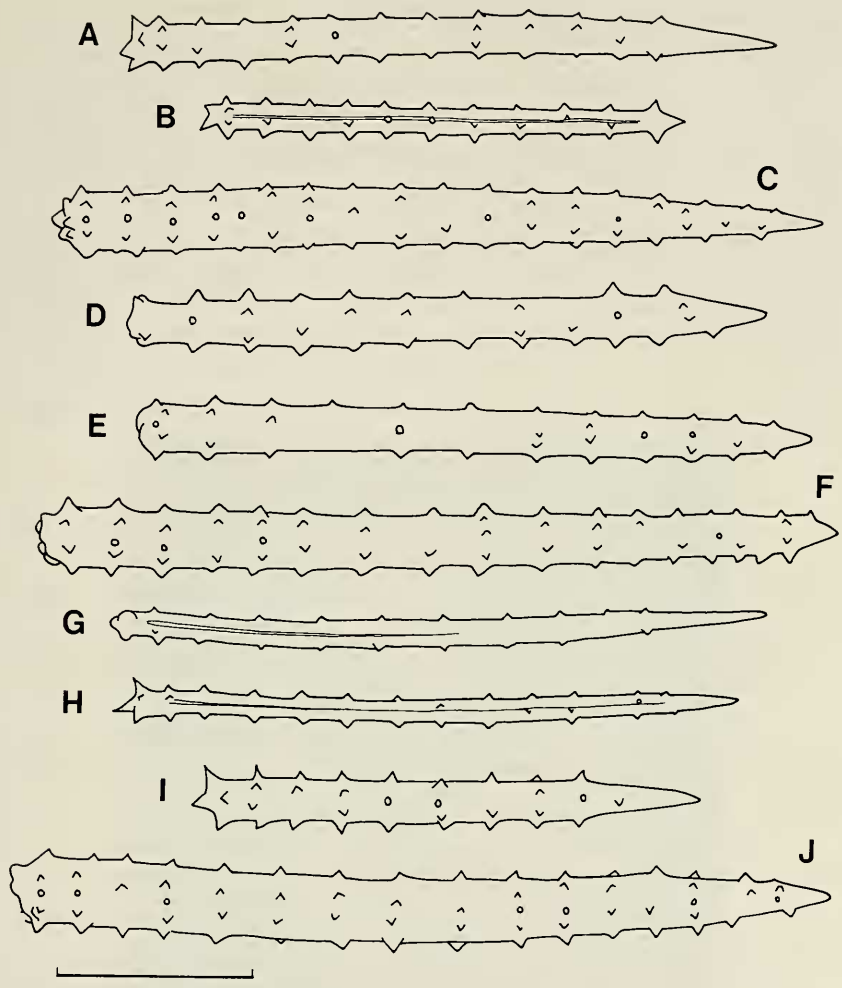


Fig. 32 - A: *Agelas dispar*, specimen SOS.6; B: *Agelas longissima* sp. n.; C: *Agelas conifera*, specimen SH.28; D: *Agelas clathrodes*, specimen SH.27; E: *Agelas inaequalis* sp. n.; F: *Agelas* sp. 1; G: *Agelas* sp. 2; H: *Agelas* sp. 3; I: *Agelas* sp. 4; J: *Agelas* sp. 5. Scale: 30 μm.

are sparse, 5-6 mm in diameter; the smaller ones are crowded, up to about 1.5 mm wide.

SH.28: part of an erect, branching, contort sponge. The colour in life was orange-red; it is presently (in formalin) orange-brown. The

larger oscules, sparse, measure about 5 mm, the smaller, crowded ones, up to 2 mm. A few invaginations are present, but inconspicuous.

With the exception of BC.36, the specimens are infested by a zoanthid. The interior is not cavernous. The fibres are 30-90 μm thick, partly cored, very sparsely echinated. They form meshes 180-400 μm wide.

Spicules: verticillated acanthostyles straight, a few very slightly curved. There are about 13-18 whorls of 4 to 7 spines each, reaching the point. Usually the whorls at the middle of the shaft are more spaced than at the ends. The base is usually rounded, with rather numerous spines or tubercles. The size is 80-185 × 6-11.5 μm.

The present identifications are based on WIEDENMAYER's redescription of the species (1977: 130).

Agelas clathrodes (Schmidt) (Fig. 32)

Chalinopsis clathrodes Schmidt, 1870: 60

Occurrence: Off La Parguera (Puerto Rico), drop-off, depth 25 m, 12 May 1964. R.N. SH.27.
Boca Chica (Dominican Republic), Depth 7-8 m, 12 April 1964. R.N. BC.50.
Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964. R.N. BY.6.
Duncans (Jamaica), drop-off, depth 35 m, 30 March 1964. R.N. NC.37.

SH.27: fragment of large, massive sponge. Larger oscules sparse, 3-5 mm wide; smaller oscules very numerous, 1-2 mm wide; slits short and narrow, rare.

BC.50: fragment of large, massive sponge. Oscules irregular, very thick, 1-4 mm wide; twisted slits deep, up to 3 mm wide.

BY.6: fragment. Oscules irregular, thick, up to 7 mm wide; deep slits partially covered by the ectosome.

NC.37: fragment of very large specimen. Oscules roundish or irregular, up to 8 mm wide; twisted slits covered by the ectosome.

The colour in life of all the specimens was bright orange-red. It is light orange (about C.C.199) after preservation in formalin. The interior of all the specimens is cavernous. The fibres are 35-75 μm thick, echinated and partly cored. They form meshes 90-400 μm wide.

Spicules: verticillated acanthostyles straight, rarely slightly curved. They measure 60-195 × 2.5-10 μm. There are 9 to 12 whorls of 3 to 6 spines each. The spines, reduced to two or one, almost reach the point.

Agelas inaequalis sp. n. (Fig. 32, 33)

Occurrence: Off Norman's Cay, Exumas (Bahamas), drop-off, depth 25 m, 10 February 1963. R.N. 1066.

Holotype: MSNG 47689

The specimen, preserved entire, grows erect from a base about 5 cm in diameter and widens to a grossly flabellate form, with the lateral borders curving inside, thus suggesting an aborted cup, with one third of the wall missing. The total height is 21 cm, the maximum width 15 cm, the upper border is 1 cm thick. The entire convex side is uniformly perforated by ostia 0.5-1 mm wide and 1-1.5 mm apart. On the concave side there are numerous, sparse multiple oscules 5 to 10 mm

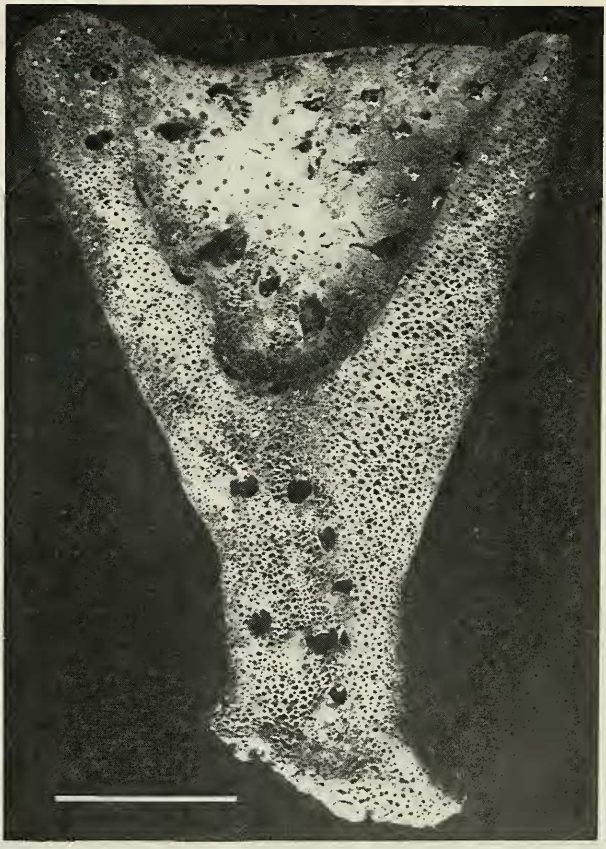


Fig. 33 - *Agelas inaequalis* sp. n., the holotype. Scale: 5 cm.

wide, rather irregular. Ostia are present only on part of this surface, where the separation between an inhalant face and an exhalant one becomes uncertain. The sponge is infested by a zoanthid. Its colour in life was orange-brown (C.C.186-191), maintained in the dry state. The fibres, 45-90 μm thick, are abundantly echinated; coring spicules are observed only occasionally.

Spicules: acanthostyles verticillated, measuring 65-149 × 3.5-7 μm. The spination is rather irregular and feeble. There are 10 to 12 whorls of 3 to 4 spines each.

Agelas longissima sp. n. (Fig. 32, 34)

Occurrence: Off Norman's Cay, Exumas (Bahamas), depth 25 m, 10 February 1963. R.N. 1067.

Holotype: MSNG 47690

The specimen is a rather regular, curved cylinder 82 cm long, 1.5 to 2.5 cm thick. The surface is smooth, the interior compact. The oscules, uniformly distributed, are 2 to 3 mm wide and 10 to 15 mm apart. The pores are closely set, 90-250 μm wide. The specimen is in the dry state, its colour is middle brown, its consistency stiff. The fibres, light brown, 45-95 μm thick, forming meshes 180-280 μm wide, are sparsely echinated, only occasionally and sparingly cored.

Spicules: verticillated acanthostyles measuring 65-115 × 2.5-4.7 μm, with 10 to 13 whorls of 3 to 4 spines each. They appear frail, with axial canal wide and conspicuous. These spicules are straight, nearly isodiametric, with short point.

At first sight this specimen seems to belong to *Agelas cylindrica* (CARTER, 1883: 314), but its spicules are quite different.

Fig. 34 - Partial view of the holotype of *Agelas longissima* sp. n. Scale: 2 cm.

Agelas sp. 1 (Fig. 32)

Occurrence: Duncans (Jamaica), drop-off, depth 35 m, 30 March 1964. R.N. NC.38.

A fragment of a tubular sponge, yellow-brown in life, brown (C.C. 176) after preservation in formalin. The outer surface is even, perforated by closely-set ostia up to 1.5 mm wide. The oscules, on the inner surface, are multiple, about 5 mm wide. The choanosomal canals do not exceed 2 mm in diameter. The fibres, 45-90 μm thick, are profusely echinated, only occasionally cored.

Spicules: acanthostyles verticillated, measuring 83-167 × 5.5-11.5 μm. There are 12-16 whorls rather distinct and regular, with 4 to 6 spines each.

Agelas sp. 2 (Fig. 32)

Occurrence: Rabbit Cay, Bimini (Bahamas), depth 2-3 m, 19 March 1964. R.N. RC.13.

The specimen, entire, is massive, lobate, 12 × 16 × 5 cm, and appears to have been attached to the substrate at two separate narrow points. The colour in life was reddish brown (C.C.81); in the dry state it is about C.C.707-708. The interior is very cavernous, with canals almost 1 cm wide. The sponge is light, hard as wood. The surface is smooth; the oscules are sparse, numerous, very irregular, ranging from circular ones, 1 mm in diameter, to elongate, irregular and deep invaginations 20 mm long. The smaller invaginations are covered by the ectosome. The spongin fibres, middle-brown, are 45-90 μm thick and form roundish meshes 75-200 μm wide. They are irregularly, rather sparsely echinated.

Spicules: verticillated acanthostyles measuring 47-130 × 3.4-4.6 μm (spines not included), straight or slightly curved. They appear frail, with feeble spines and widened axial canal. There are 9 to 11 whorls of 2 to 3 spines each.

Only the character of its spicules sets this specimen apart from *Agelas dispar*.

Agelas sp. 3 (Fig. 32)

Occurrence: Staniel Cay, Exumas (Bahamas), cave, depth 2-4 m, 3 March 1963. R.N. 1118.

The specimen, entire, is massive, lobate, 11 × 4 × 8 cm. The colour in life is not known; a reasonable assumption is that it was orange,

since it is now (in formalin) orange-brown (C.C.203). The surface is smooth, the interior very cavernous, with canals up to 1 cm wide. The sponge is firmly resilient. The oscules range from round ones in clusters, about 1 mm in diameter, to slit-like openings. The fibres of amber coloured spongin are 20-50 μm thick and form meshes 50-250 μm wide. They are very sparsely echinated, only occasionally cored.

Spicules: verticillated acanthostyles measuring 50-120 × 3-4 μm (spines not included), straight or very slightly curved, with 9 to 11 whorls of 2 to 3 spines each. They are frail, with widened axial canal. The base of most of these spicules has one to three oblique spines.

Agelas sp. 4 (Fig. 32)

Occurrence: Duncans (Jamaica), drop-off, depth 40-45 m, 30 March 1964. R.N. NC.14.

Fragment of an erect, very tall, subcylindrical, branching specimen. The colour in life was light brown, yellow at the tip of the branches, light tan internally. In formalin the colour is dark brown (C.C.696). The available fragment has a diameter of 2 cm. The surface is unevenly wrinkled, ridged. There are abundant oscules, circular, about 1.5 mm in diameter. The interior is compact, with canals not apparent to the unaided eye. The surface is infested by a zoanthid. The fibres of clear spongin, 50-150 μm thick, form irregular, roundish meshes 150-350 μm wide. They are abundantly echinated, only occasionally cored.

Spicules: verticillated acanthostyles straight, measuring 80-110 × 4.5-9 μm, spines not included. The whorls are 8 to 10, with 4 to 5 spines each. From the base of most acanthostyles one or more sharp spines project obliquely.

Agelas sp. 5 (Fig. 32)

Occurrence: Duncans (Jamaica), drop-off, depth 35 m, 30 March 1964. R.N. NC.34.

Fragment of large, erect, ramose specimen, subcylindrical, 4 cm in diameter. Colour in life yellow-brown, in formalin brown (C.C.702). The surface is granulated, with circular vents up to 1 cm wide and densely-set elongated grooves. The interior canals do not exceed 2 mm in diameter. The pores are about 150 μm wide and as much apart. The fibres, irregular, are abundantly echinated, only occasionally cored.

Spicules: verticillated acanthostyles measuring 90-180 × 7-11.5 μm. The whorls are 13 to 17, with 4 to 7 spines each.

CERACTINOMORPHA

HALICHONDRIDA

HALICHONDRIIDAE

Halichondria melanodocia Laubenfels

Halichondria melanodocia Laubenfels, 1936: 133

Occurrence: Port Royal (Jamaica), wharf pilings, depth 1-6 m, 23 March 1964. R.N. PR.10.
Port Royal (Jamaica), mangrove, depth 0.5 m, 23 March 1964. R.N. KM.3.
La Parguera (Puerto Rico), mangrove, depth 1 m, 18 May 1964. R.N. LP.88.

PR.10: the specimen is a mass of weak consistency, 9 × 9 × 4 cm, with irregular lobes and digitations which coalesce in part, 2-3 cm high and 1-1.5 cm thick, bearing an apical oscule with membranous rim. The colour in life was dark grey with bluish and greenish tinges, greenish grey internally; it is dark brown in formalin. The surface is smooth; the ectosome, supported by tangential spicules in intercrossing irregular bundles, is separable. The pores are 100-150 μm wide, 190-380 μm apart. The spicules are oxeas straight to slightly curved, measuring 130-580 × 5.5-11.5 μm.

KM.3: massive, on mangrove root, bluish or greenish black, interior greenish or dull yellow, soft. The oxeas are straight or slightly curved, measuring 130-465 × 3.5-9.5 μm.

LP.88: fragments of very large specimen. The colour in life was tan inside and outside, the consistency was weak, crumbling. Large raised oscules were observed, about 1 cm wide, and papillae 1 cm high. The ectosomal skeleton is tangential, consisting of scattered spicules and tracts which form a rather close irregular reticulation. The choanosomal skeleton is a very irregular reticulation of vague spicular tracts and single spicules. The oxeas are slightly curved; their size is notably smaller than hitherto recorded, 270-330 × 7-9 μm.

Spongosorites sinuatus sp. n. (Fig. 35, 36)

Occurrence: Boca Chica (Dominican Republic), depth 2-3 m, 11 April 1964. R.N. BC.20, BC.23.

Holotype (BC.20): MSNG 47691

Paratype (BC.23): MSNG 47692

The specimens are irregularly cushion-shaped, firm. The colour in life was whitish with some violaceous tinge. The surface is glabrous;

a few oscules, sparse, are about 3 mm wide, with slightly elevated rim. The spiculation is dense, confused, without ectosomal differentiation.

Spicules: 1) Oxeas uniformly curved, measuring 450-1170 × 11-32 μm. 2) Oxeas sinuous, contorted, measuring about 400-500 × 6-9 μm. The latter spicules are not abundant, but they are present in both specimens.

Fig. 35 - *Spongosorites sinuatus* sp. n., the holotype. Scale: 1.5 cm.

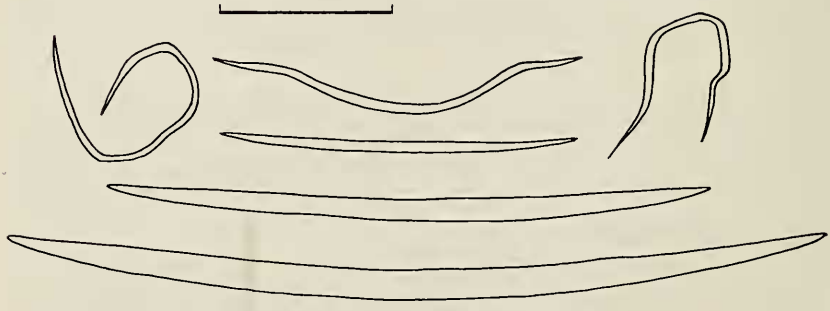


Fig. 36 - Spicules of *Spongosorites sinuatus* sp. n. Scale: 50 μm.

Hymeniacidonidae

Hymeniacidon heliophila (Parker)

Stylotella heliophila Parker, 1910: 767

Occurrence: Boca Chica (Dominican Republic), depth 4-5 m, 18 April 1964. R.N. BC.79.

The specimen was orange in life and had a very scarce consistency. In the dry state it is extremely brittle.

Spicules: Styles straight or slightly curved, measuring 310-560 × 3.5-7 μm.

Hymeniacidon amphilecta Laubenfels

Hymeniacidon amphilecta Laubenfels, 1936: 137

Occurrence: Boca Chica (Dominican Republic), depth 30-40 m, 15 April 1964. R.N. BC.68.
Off La Parguera (Puerto Rico), depth 15-25 m, 12 May 1964. R.N. SH.21.

BC.68: this specimen was noted as dark violet with tan interior, softly elastic and easy to tear, oscules up to 2 cm wide on conical lobes. The colour after preservation in formalin is uniformly cream.

SH.21 was noted as locally abundant, violet externally with tan interior, oscules up to 1 cm wide on conical processes, consistency as wet bread. The fragment in formalin is cream coloured.

Besides the large oscules on conical lobes, there are smaller ones, sparse and in clusters, 0.5-2 mm wide.

Spicules: Styles slightly, sometimes irregularly curved, measuring 230-310 × 4.5-9.5 μm in BC.68, 190-270 × 4-9 μm in SH.21.

Hymeniacidon caerulea sp. n. (Fig. 37)

Occurrence: Boca Chica (Dominican Republic), depth 7-8 m, 11 April 1964. R.N. BC.30.
La Parguera (Puerto Rico), depth 4-5 m, 9 May 1964. R.N. LP.66.

Holotype (LP.66): MSNG 47693

The two specimens are small encrustations. They were blue in life, assumed a green tinge in formalin and in alcohol; now dry, they are blue (C.C.448). The skeleton is confused with vague tracts.

Spicules: Styles more or less uniformly curved, measuring 230-560 × 4.5-9.5 μm.

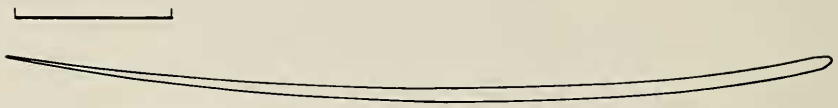


Fig. 37 - Spicules of *Hymeniacidon caerulea* sp. n. Scale: 100 μm.

Dictyonella y u m a e sp. n. (Fig. 38)

O c c u r r e n c e : Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964. R.N. BY.17.

Holotype: MSNG 47694

The specimen is cushion-shaped, measuring 6 × 2.5 × 2 cm. In life it was firm and elastic, conulose and hispid, violaceous on top, orange and yellow on the shadowed parts. The skeleton consists of ascending multispicular tracts devoid of spongin, branching and anastomosing, joined by single spicules in confusion.

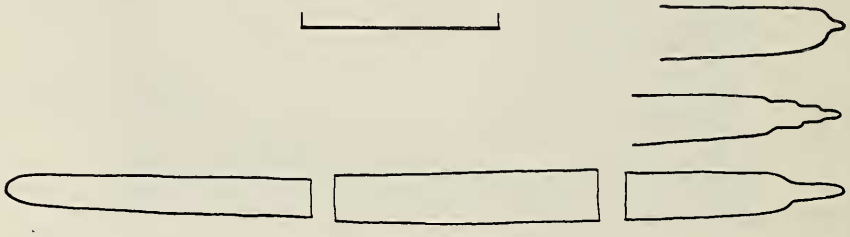


Fig. 38 - Spicules of *Dictyonella yumae* sp. n. Scale: 50 μm.

Spicules: Styles measuring 540-680 × 4-14 μm, straight or very slightly curved. The base is narrower than the middle, the point is invariably malformed, shortened, stepped down, mucronate.

Ulosa ruetzleri Wiedenmayer

Ulosa ruetzleri Wiedenmayer, 1977: 145

O c c u r r e n c e : Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.13.

The specimen, in formalin, is a limp, amorphous mass drab coloured. The colour of the living sponge was orange. The skeleton consists

of an extremely loose and irregular reticulation of spongin fibres variously cored by proper spicules. Foreign spicules are not present.

Spicules: Styles measuring 400-550 × 5.5-8 μm.

POECILOSCLERIDA

Mycalidae

Mycale laxissima (Duchassaing & Michelotti) (Fig. 39-42)

Acamas laxissima Duchassaing & Michelotti, 1864: 95
not *Acamasina laxissima*: Laubenfels, 1936: 117

Occurrence: Port Royal (Jamaica), on submerged ruins, depth 5-10 m, 27 March 1964. R.N. PR.40.

The specimen is tubular, 8 cm high, 3.5 cm in diameter. It was violaceous in life, and gave off a large quantity of slime upon collection. Presently in formalin, it is reduced to a resilient skeleton, very pale violet; the soft part has deposited at the bottom of the jar. The main fibres, packed by the megascleres, ascending and directed toward the periphery, are up to 400 μm thick, 3 to 4 mm apart; they are connected by thinner secondary ones forming irregularly wide meshes. Spongin is scarce, not overlapping.

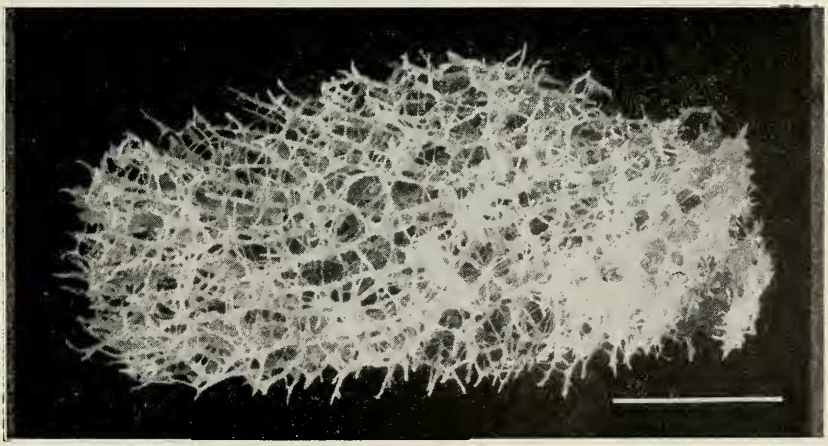


Fig. 39 - *Mycale laxissima* D. & M., specimen PR.40. Scale: 2 cm.

Spicules: 1) Subtylostyles straight, isodiametric, with evident axial canal, tyle scarcely developed and oblong, point short and sharp, measuring 220-250 × 3.5-4.5 μm. 2) Palmate anisochelas measuring 20-23 μm. 3) Sigmas only slightly contort, rarely S-shaped, with a chord of 69-80 μm, about 3.5 μm thick.

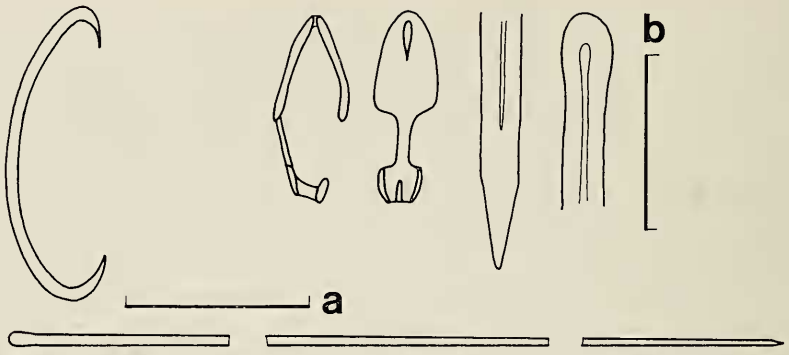


Fig. 40 - *Mycale laxissima* D. & M. Spicules from specimen PR.40. Scale a: 50 μm, scale b: 20 μm.

Fig. 41 - The lectotype of *Acamas laxissima* D. & M. (Turin Museum).

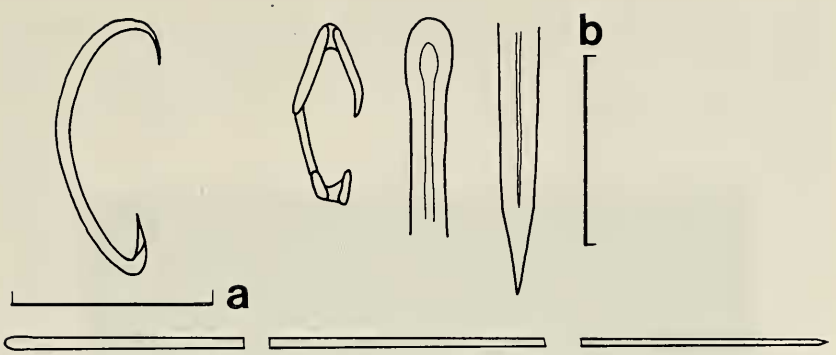


Fig. 42 - Spicules of the lectotype of *Acamas laxissima* D. & M. (Turin Museum). Scale a: 50 μm, scale b: 20 μm.

The type of *Acamas laxissima* is kept at the Museo ed Istituto di Zoologia Sistematica, Turin University, and is the same specimen which Duchassaing & Michelotti figured (1864: Pl. XXII, Fig. 3). The sponge is in the dry state, reduced to its fibrous skeleton. The fibres, densely packed by the megascleres, are up to about 400 μm thick; the meshes, for the most part irregular, are 1.5 to 3 mm wide. Spongin is very scarce, not overlapping. Spicules: 1) Subtylostyles measuring 230-260 × 2.5-3.5 μm, straight, isodiametric; tyle scarcely developed, elongated; point short and sharp; axial canal evident and often blackened. 2) Palmate anisochelas measuring 16-20 μm. 3) Sigmas C-shaped, with a chord of 50-71 μm. In my preparations the chelas are fairly abundant, the sigmas extremely rare.

Acamas laxissima has been misidentified by de Laubenfels (1936: 117), who erroneously attributed to it tylostyles, palmate isochelas and toxas.

Mycale mucifluens sp. n. (Fig. 43-45)

Occurrence: Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.32.

La Parguera (Puerto Rico), depth 1.5 m, 9 May 1964. R.N. LP.62.

Holotype (KC.32): MSNG 47695

Paratype (LP.62): MSNG 47696

The specimen KC.32 was bright red-brown in life, loosely spongy, very mucous. It is now in three fragments, reduced to its skeleton,

cream to pale violet. The soft parts have deposited at the bottom of the jar; the preserving formalin is slimy and has acquired a bright violet colour (C.C.32).

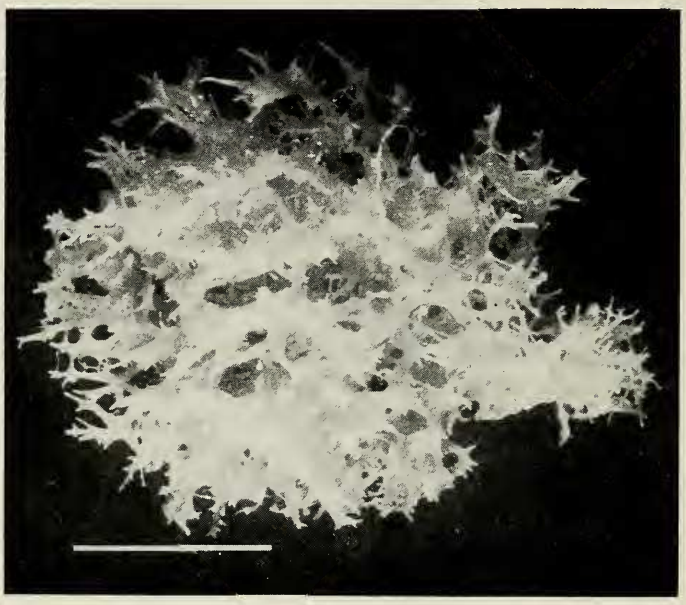


Fig. 43 - *Mycale mucifluens* sp. n., the holotype: Scale: 2 cm.

There is no apparent ectosomal skeleton. The skeletal structure consists of a rather loose and irregular reticulation of clear spongin fibres in which the megascleres are more or less densely embedded. The main fibres are irregular, flattened, up to about 2 mm thick, 4 to 7 mm apart. They are joined by secondary fibres, cylindrical, and may also give off lateral branchlets with free distal ends. The meshes thus formed are very irregular, from 0.5 to 10 mm wide. Toward the surface finer meshes and free branchlets are more frequent.

Spicules: 1) Subtylostyles straight, isodiametric, point short and blunt, axial canal apparent, size 250-290 $\times$ 3.5-4.5 μm. 2) Anisochelas palmate measuring 19-29 μm. 3) Sigmas mostly C-shaped, with chord of 77-93 μm, 2-3.5 μm thick.

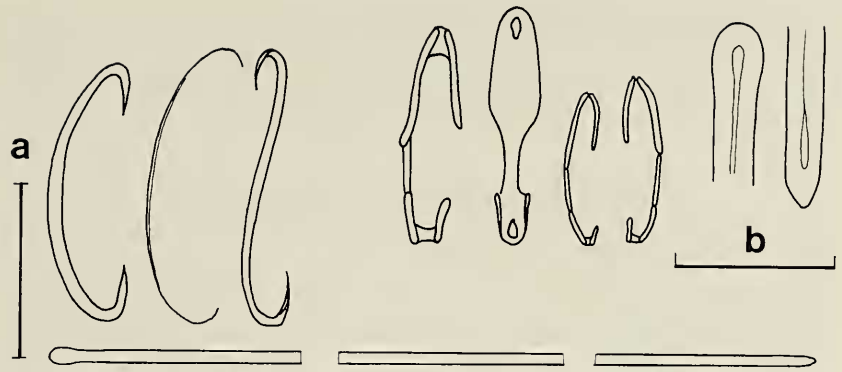


Fig. 44 - *Mycale mucifluens* sp. n. Spicules of the holotype. Scale a: 50 μm, scale b: 20 μm.

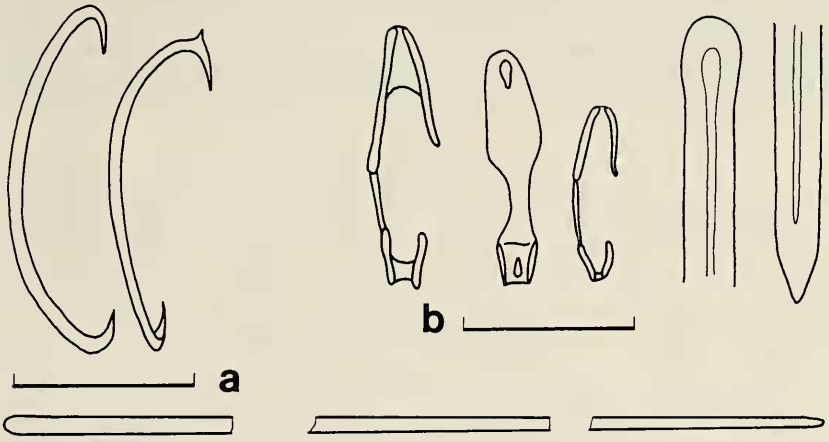


Fig. 45 - *Mycale mucifluens* sp. n. Spicules of specimen LP.62. Scale a: 50 μm, scale b: 20 μm.

The specimen LP.62 was enveloping dead coral, reddish brown, with scarce consistency, giving off a sticky slime. Placed in formalin, it tinged it violet. Now in spirit, it is reduced to a loose skeleton with little flesh attached, cream coloured.

No ectosomal skeleton is apparent. The skeletal structure is reticulated, made by polyspicular fibres of clear spongin. The main fibres are flattened, sometimes fasciculated, up to 1 mm thick; with the secondary ones they form very irregular meshes 0.5 to 5 mm wide.

Spicules: 1) Subtylostyles straight, isodiametric, point short and generally blunt, axial canal apparent, measuring 220-280 × 3.5-4.7 μm. 2) Anisochelas palmate measuring 18.5-29 μm. 3) Sigmas mostly C-shaped with a chord of 87-105 μm, 1.5-4.5 μm thick.

Mycale microsigmatosa (Arndt) (Fig. 46)

Mycale fistulata microsigmatosa Arndt, 1927: 144

Occurrence: La Parguera (Puerto Rico), mangrove, depth 0.5-1 m, 18 May 1964. R.N. LP.69, LP.77, LP.81.

Port Royal (Jamaica), mangrove, depth 0.2-1.5 m, 23 March 1964. R.N. KM.1, KM.2.

The specimens from La Parguera are small masses attached to mangrove roots, consisting in large part of agglomerated polychaete tubes. LP.69 was brown in life, with carmin-red speckles. It is now dry; the flesh has shrunk revealing very numerous gemmules attached to the tubes. They are hemispherical, white, brittle, measuring 200-300 μm. LP.77 and LP.81 were deep red. The three specimens are now

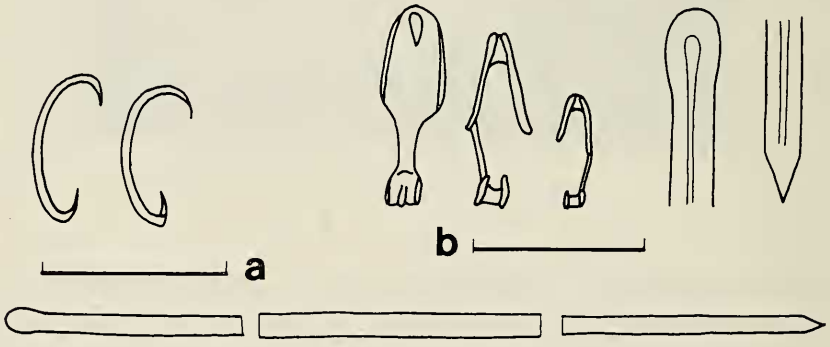


Fig. 46 - *Mycale microsigmatosa* (Arndt). Spicules of specimen KM.1. Scale a: 50 μm, scale b: 20 μm.

brown. KM.1 and KM.2 were encrusting on mangrove roots, very soft, pink and light orange-red respectively. Preserved in formalin they are brown.

Spicules: 1) Subtylostyles straight, point short and sharp, slightly fusiform, measuring 200-270 × 4-7 μm. In most specimens their thickness does not exceed 4.5 μm. 2) Anisochelas palmate measuring 12.5-23 μm. 3) Sigmas with a chord of 25-40 μm.

Mycale laevis (Carter) (Fig. 47)

Esperia laevis Carter, 1882: 291

Mycale laevis: Hechtel, 1965: 46

Occurrence: Port Royal (Jamaica), on pilings of wharf, depth 1-6 m, 23 March 1964. R.N. PR.14.

Port Royal (Jamaica), on submerged ruins, depth 5-10 m, 27 March 1964. R.N. PR.61.

PR.14 was massive, irregularly lobate, spongy, light orange-yellow. PR.61 was massive, soft, orange-yellow, locally abundant.

Spicules: 1) Styles measuring 470-580 × 10-16 μm. Some may be very faintly subtylostylote. They are straight or slightly curved; the first third of their shaft is thinner than the middle. The point is, as a rule, short and blunt. 2) Anisochelas palmate measuring 59-78 μm. 3) Anisochelas palmate measuring 16-21 μm. 4) Sigmas with a chord of 18-46 μm. 5) Trichodragmata 50-81 μm long.

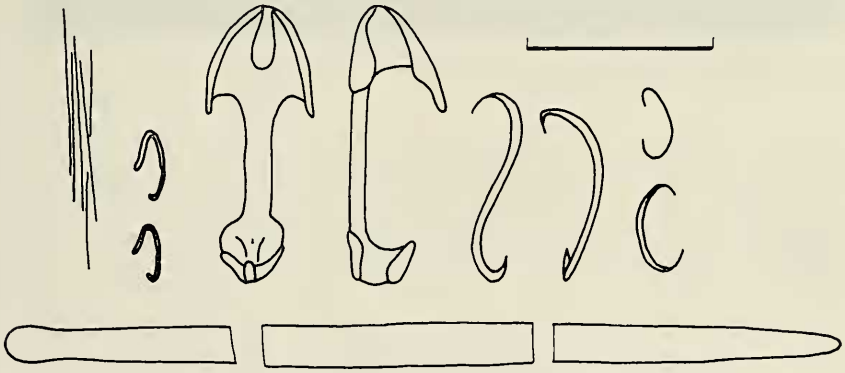


Fig. 47 - *Mycale laevis* (Carter). Spicules of specimen PR.14. Scale: 50 μm.

Mycale jamaicaensis sp. n. (Fig. 48, 49)

Occurrence: Duncans (Jamaica), depth 35 m, fore-reef slope, 30 March 1964. R.N. NC.43.

Holotype: MSNG 47697

The specimen is a fragment of a large tubular sponge, the wall of the tube being 2 cm thick. The colour in life was crimson-red. According to field notes, the sponge was mucous to the touch but did not give off slime after collection and in formalin. The sponge consists

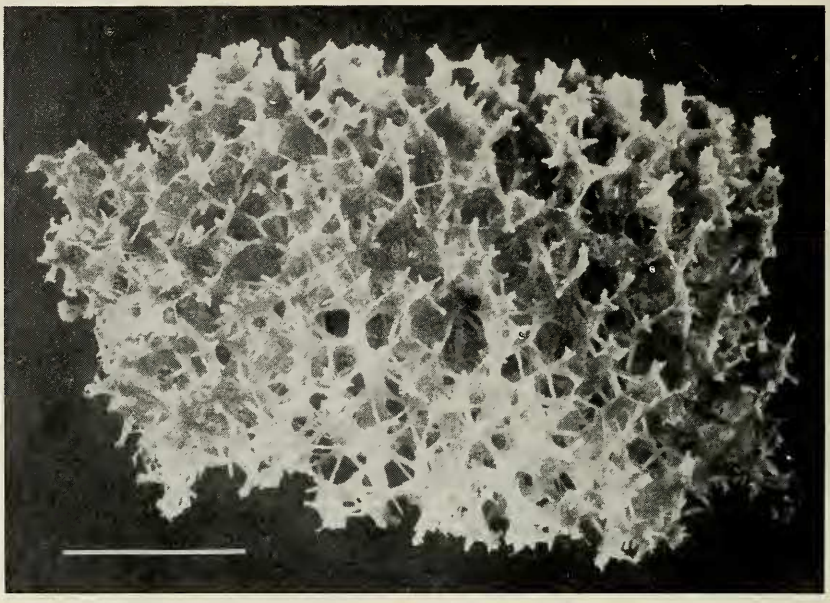


Fig. 48 - *Mycale jamaicaensis* sp. n., the holotype. Scale: 2 cm.

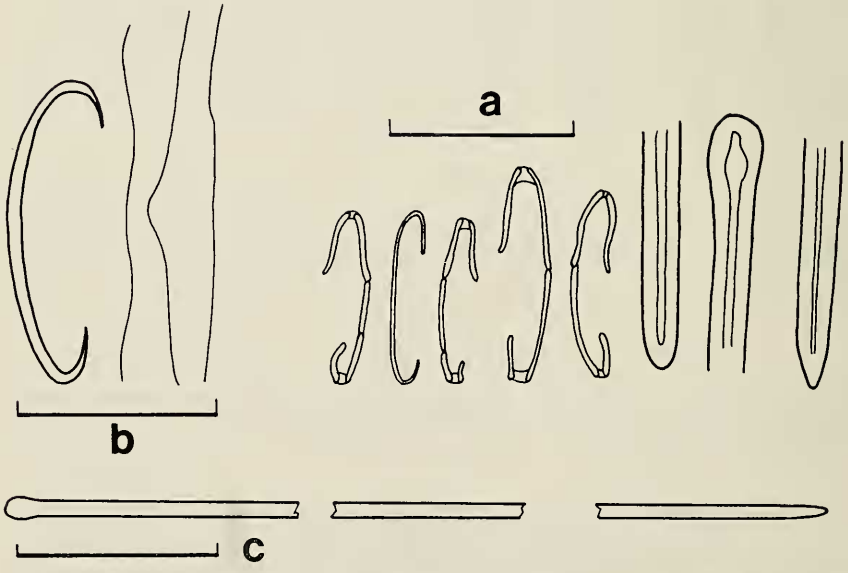


Fig. 49 - Spicules of *Mycale jamaicaensis* sp. n. Scale a: 20 μm, scale b: 50 μm, scale c: 50 μm.

now of a firm and inelastic skeleton violet coloured (C.C.16); the soft part has separated and deposited at the bottom of the jar. The skeleton is reticulated, devoid of ectosomal differentiation, with meshes up to 6 mm wide. The main fibres are irregular, flattened, and may be 3 or 4 mm wide where they join each other. Reaching the surface, they divide in several short branchlets. The secondary fibres are cylindrical. The fibres consist of pale amber-coloured spongin in which abundant subtylostyles are embedded. These may form thick parallel rows or, in the flattened parts of the fibres, appear in tracts or in confusion.

Spicules: 1) Subtylostyles straight, isodiametric, measuring 250-280 × 3-3.5 μm. The point is blunt, often strongylote. 2) Sigmas C-shaped, with a chord of 65-90 μm, 2-2.5 μm thick. 3) Anisochelas palmate measuring 16-23 μm. 4) Raphides sinuous (raphidotoxas) measuring about 100 μm, rare.

Mycale whitfieldi sp. n. (Fig. 50)

Hircinia purpurea: Whitfield, 1901: 49
not *Hircinia purpurea* Hyatt, 1877: 550

Not present in this collection.

I have been able to examine a fragment of Whitfield's specimen kept at the American Museum of Natural History. It is in the dry state and has shrunk to a fibrous reticulated skeleton on which little flesh is attached. The fibres are made of amber to reddish-brown stratified spongin embedding a variable number (generally scarce) of subtylo-

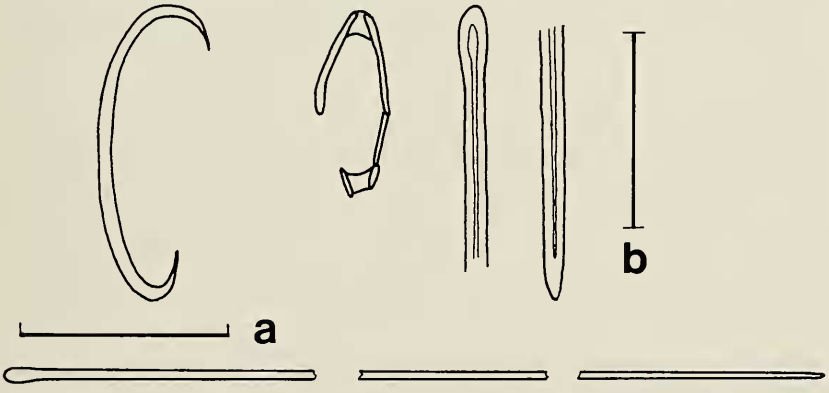


Fig. 50 - Spicules of *Hircinia purpurea*, Whitfield, 1901. Scale a: 50 μm, scale b: 20 μm.

styles. The coarse fibres are up to 800 μm thick and form irregular meshes, 1.5 to 4 mm wide.

Spicules: 1) Subtylostyles straight, isodiametric, measuring 214-270 × 2.5 μm. The tyle is elongated and scarcely conspicuous, the point is short, more or less rounded. 2) Anisochelas palmate measuring 18.5-22.5 μm. 3) Sigmas C-shaped, with a chord of 71-76 μm.

The spiculation of the specimen agrees with that of *Mycale laxissima* – except that the subtylostyles are here a little thinner and with a rounded instead of sharp point. But what sets *Mycale whitfieldi* apart is its skeletal frame, markedly different.

The *Hircinia purpurea* of Whitfield had been erroneously synonymized by de Laubenfels (1936: 117) with his *Mycale angulosa* and misinterpreted as a *Thorecta* by Wiedenmayer (1977: 70).

Mycale hyatti sp. n. (Fig. 51)

Hircinia cartilaginea: Hyatt, 1877: 549 (*pars*)
not *Spongia cartilaginea* Esper, 1798: 23

Not present in this collection.

I have had the opportunity of examining the specimens of *Hircinia cartilaginea* deposited at the Museum of Comparative Zoology, Harvard University. There are three of them, in the dry state, reduced to their fibrous skeleton. Two, MCZ 7008 and MCZ 7071, are labeled *Hircinia cartilaginea* (Esper) Hyatt; one, MCZ 7073, *Hircinia cartilaginea* (Esper) Hyatt var. *horrida* Hyatt.

Specimen MCZ 7008, here designated as the type of *Mycale hyatti*, is attached to the stem of a gorgonarian, conical, hollow, 14 x 5 cm wide at the base, 9 cm high, with an apical pseudoscule 3 cm wide. The skeletal reticulation is coarse, irregular, with meshes up to 5 mm wide. The fibres consist of subtylostyles more or less densely arranged, joined by overlapping amber-coloured spongin. These spicules are straight, with scarcely conspicuous tyle, the point mostly rounded. They are 230-300 μm long and show a remarkable variability in thickness, from 3 to 11.5 μm. The microscleres are sigmas having a chord of 75-105 μm, up to 7.5 μm thick, and palmate anisochelas measuring 23-26 μm.

Specimen MCZ 7071, a tubular sponge 10 cm high and 5 cm in diameter, appears at sight as belonging to a different species. The skeletal reticulation is much more delicate and regular, with the main tracts

obliquely ascending. The subtylostyles, more or less densely embedded in light-coloured spongin, are 230-290 μm long but do not exceed 3.5 μm in thickness; their shape and size is to be found in many tropical *Mycale*. I have not obtained microscleres in my preparations, and can only regard this specimen as a *Mycale* not definable specifically at the moment.

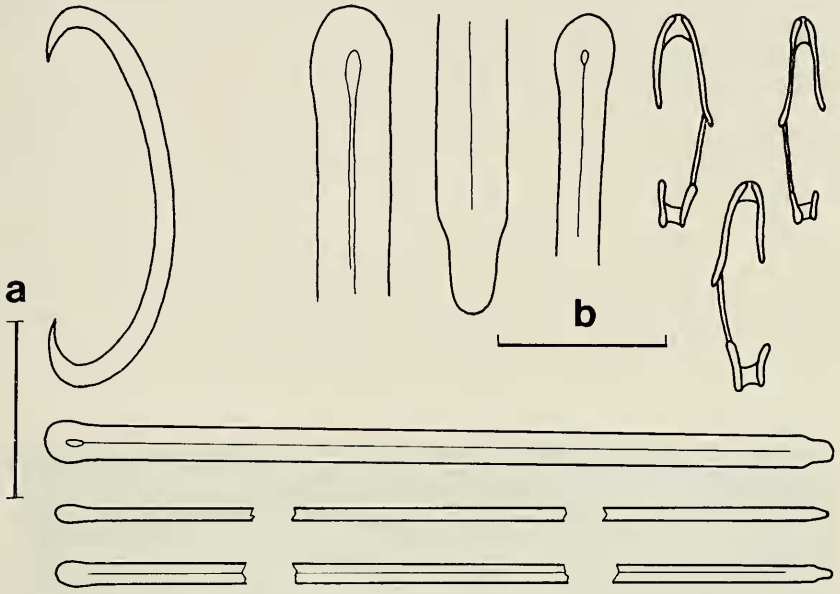


Fig. 51 - Spicules of *Hircinia cartilaginea*: Hyatt, specimen MCZ 7008, type of *Mycale hyatti* sp. n. Scale a: 50 μm, scale b: 20 μm.

Specimen MCZ 7073 is a piece of a tubular sponge 6 cm in diameter, with an apical pseudoscule 2.5 cm wide. The reticulation, with meshes up to 3 mm wide, is closer and more regular than in MCZ 7008, devoid of the orientation toward the surface shown by MCZ 7071. The fibres of amber-coloured spongin contain subtylostyles less densely arranged than in the other two specimens. These spicules, straight, with elongated narrow tyle, measuring 260-290 × 3-3.5 μm, are of the common *Mycale* type. No microscleres have been found in my preparations. I consider this specimen as a *Mycale* not specifically definable at the moment.

The *Hircinia cartilaginea* of HYATT, together with its variety *horrida* and with the *Hircinia purpurea* of WHITFIELD (also a *Mycale*) had been erroneously identified as *Thorecta horridus* by WIEDENMAYER (1977: 70).

Zygomycale angulosa (Duchassaing & Michelotti) (Fig. 52-55)

Pandaros angulosa Duchassaing & Michelotti, 1864: 89
not *Mycale angulosa*: Laubenfels, 1936: 116
Raphiodesma parishii Bowerbank, 1875: 283
Zygomycale parishii: Topsent, 1930a: 431

Occurrence: Port Royal (Jamaica), on pilings of wharf, depth 1-6 m, 23 March 1964. R.N. PR.2.
Port Royal (Jamaica), on submerged ruins, depth 5-10 m, 23-27 March 1964. R.N. PR.46, PR.52, PR.64.

PR.2: irregularly ramose, twisted, 10 × 7 × 4 cm, surface with irregular prominences, aculei and ridged projections. Cavernous, firmly spongy. The colour in life was dull blue-violet, speckled; it is orange-brown (about C.C.167) in formalin.

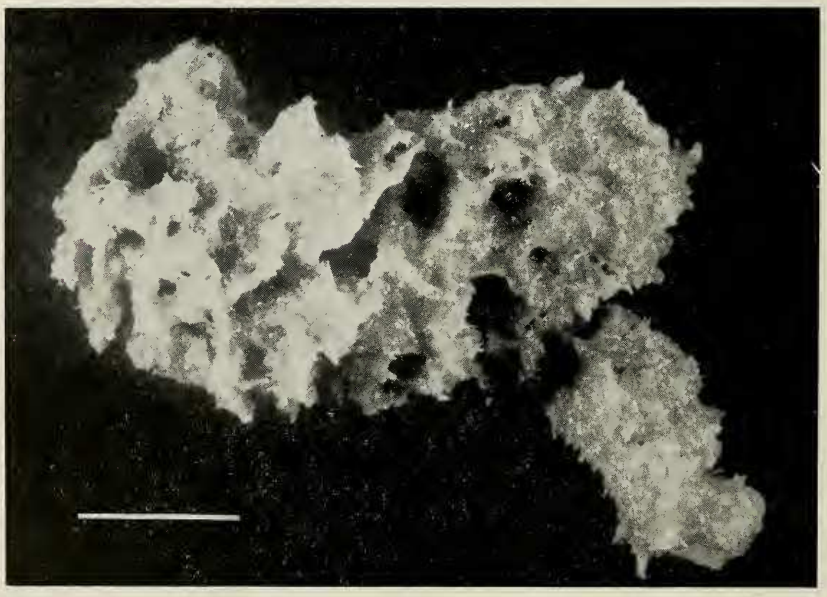


Fig. 52 - *Zygomycale angulosa* (D. & M.). Specimen PR.2. Scale: 2 cm.

PR.46: recumbent, habitus as above, branches 1.5 cm thick, rather soft, inelastic. Colour in life tan with the projections lighter; in formalin as above.

PR.52: thickly encrusting, soft, tan. Now dry, in irregular fragments, fragile, light orange (C.C.190).

PR.64: repent, thin irregular branches, soft, dull blue. In the dry state: very fragile, light orange.

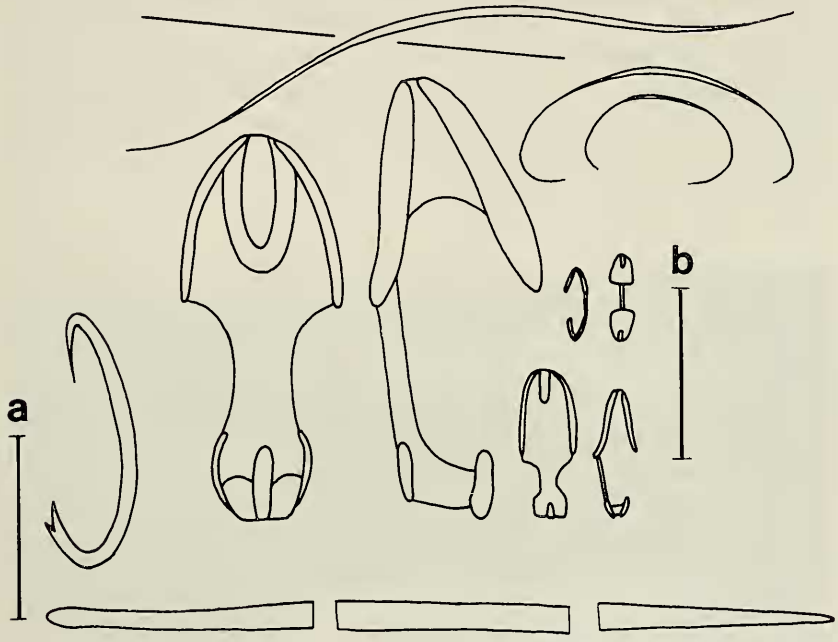


Fig. 53 - *Zygomycale angulosa* (D. & M.). Spicules of specimen PR.52. Scale a: 50 μm, scale b: 20 μm.

The ectosomal skeleton is distinct, consisting of a very regular tangential reticulation of spiculo-fibres 20-40 μm thick, forming meshes 180-280 μm wide. Tufts of single spicules arise from the nodes. The choanosomal skeleton consists of a very irregular reticulation, more or less dense, of plurispicular fibres up to 250 μm thick, with spicular tracts and many spicules scattered. Spongin is not apparent.

Spicules: 1) Subtylostyles mostly slightly flexuous, measuring 250-300 × 5.5-8 μm. The base is narrower than the middle of the shaft,

the tyle is elongated and often barely perceptible, the point is elongated and sharp. 2) Anisochelas palmate in rosettes, measuring 40-55 μm. 3) Anisochelas palmate measuring 16-26 μm. 4) Isochelas palmate measuring 8-10 μm. 5) Sigmas C- or S-shaped with a chord of 77-90 μm, about 4 μm thick. 6) Sigmas C-shaped with a chord of 12-28 μm, very thin. 7) Toxas measuring 26-90 μm. 8) Raphides straight, measuring 20-50 μm.

The type specimen of *Pandaros angulosa*, at the Museo ed Istituto di Zoologia Sistematica of the Turin University, is clearly the specimen which DUCHASSAING & MICHELOTTI figured (1864: Pl. XIX, Fig. 4). It is in the dry state. The ectosomal skeleton is a reticulation of rather loose plurispicular fibres 20 to 50 μm thick, forming meshes 180-260 μm wide. The choanosomal skeleton consists of a network, dense but devoid of regularity, of plurispicular fibres up to 140 μm thick. Many spicules are scattered.

Fig. 54 - Lectotype of *Pandaros angulosa* D. & M. (Turin Museum).

Spicules: 1) Subtylostyles straight, curved or, most often, sinuous. The tyle is elongated and scarcely noticeable; the point, as a rule, is elongated and sharp; the base is narrower than the middle of the shaft. They measure 220-300 × 3-5 μm. 2) Anisochelas palmate measuring 39-46 μm. 3) Anisochelas palmate measuring 16-27.5 μm. 4) Isochelas palmate measuring 9-11.5 μm. 5) Sigmas with a chord of 80 μm, 3-4 μm

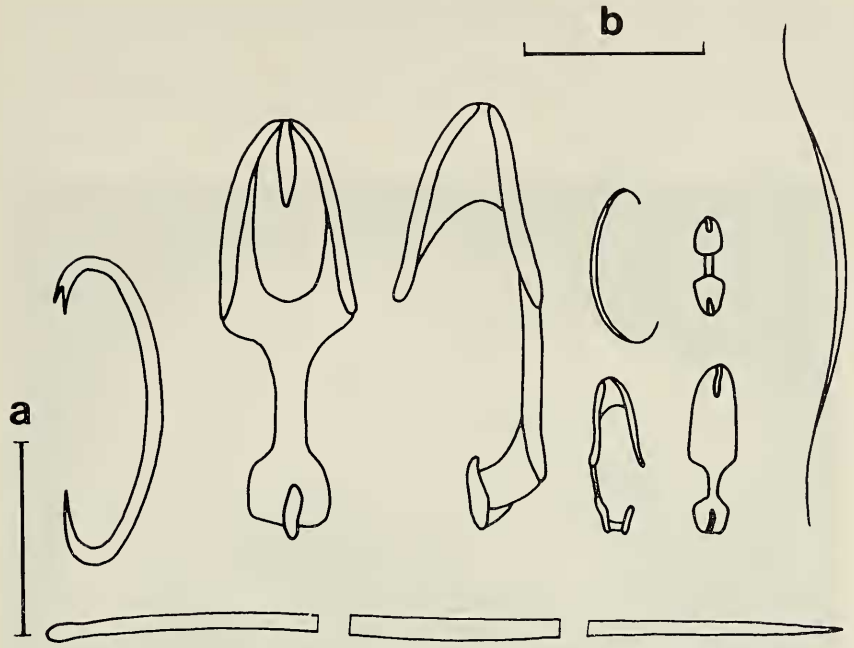


Fig. 55 - Spicules of the lectotype of *Pandaros angulosa* D. & M. (Turin Museum). Scale a: 50 μm, scale b: 20 μm.

thick. 6) Sigmas with a chord of 9-34 μm, very thin. 7) Toxas measuring 28-66 μm, very thin. All the microscleres are rare in my preparations; I am not sure about the presence of raphides.

Oxymycale strongylata sp. n. (Fig. 56, 57)

Occurrence: Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.8, KC.10.

Buca de Yuma (Dominican Republic), depth 5-25 m, 24 April 1964. R.N. BY.4, BY.8.

La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964. R.N. LP.21.

Holotype (KC.8): MSNG 47698

KC.8: massive, lobate, 9 × 5 × 5 cm. Colour in life orange-tan, interior lemon-yellow.

KC.10: enveloping dead coral. Colour in life light gray, interior yellow.

BY.4: small, cushion-shaped, consistency scarce. Yellow in life, peach coloured soon after collection.

BY.8: small, cushion-shaped. Colour in life peach-yellow.

LP.21: massive, lobate. Colour in life orange-yellow.

Fig. 56 - *Oxymycale strongylata* sp. n., the holotype. Scale: 2 cm.

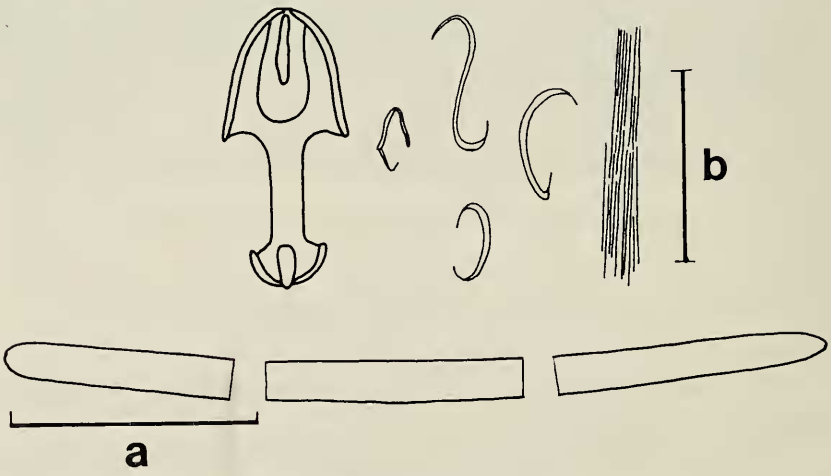


Fig. 57 - Spicules of *Oxymycale strongylata* sp. n. Scale a: 100 μm, scale b: 50 μm.

BY.4 is dry, the other specimens are in formalin, where they have a uniform peach colour (C.C.200-250). The consistency of the preserved specimens is firm, moderately resilient. The oscules are on top of the lobes, fringed, about 2 cm wide. The ectosome is separable (entirely missing from some preserved specimens), overlaying the entrance of inhalant canals 1 to 3 mm wide. The ectosomal skeleton consists of a tangential reticulation made by strongyles, single or by two or three, which form irregular meshes about 170 μm wide. The main skeleton consists of a reticulation of compact spicular tracts 90-180 μm thick forming irregular meshes 350-550 μm wide. Sparse megascleres are also present. The spicular tracts, reaching the surface, branch tree-like to support the ectosomal skeleton.

Spicules: 1) Strongyles straight to moderately curved, measuring 420-550 × 10-16 μm. 2) Anisochelas palmate measuring 69-80 μm. 3) Anisochelas palmate measuring 16-21 μm. 4) Sigmas with a chord of 14-41 μm. 5) Trichodragmata measuring 35-57 μm.

Biemnidae

Biemna caribea sp. n. (Fig. 58)

Occurrence: La Parguera (Puerto Rico), mangrove, depth 1 m, 3-18 May 1964. R.N. LP.17, LP.64, LP.84.

Holotype (LP.84): MSNG 47699

The specimens were found on mangrove roots; they were encrusting to massive, amorphous or with some tubular processes, soft and delicate, yellow.

Spicules: 1) Styles with a slight curvature, measuring 280-316 × 4.5-6.5 μm. 2) Sigmas with a chord of 23-34 μm. 3) Sigmas with a chord of 11.5-16 μm. 4) Microstyles flexuous, almost toxiform, measuring 37-50 μm. 5) Microxeas fusiform, straight, measuring 69-81 × 2 μm. 6) Microxeas fusiform, straight, measuring 30-37 × 1 μm. 7) Microxeas (raphides) straight, measuring 103-161 × 1 μm. 8) Commas measuring 11.5-14 μm.

This species appears nearest to *Biemna anisotoxa* Levi (1963: 18) from South Africa which, however, lacks the commas. There seems to be a possibility that we might be dealing with a single, circumtropical, variable species which might include *B. fistulosa* (Topsent, 1897: 462)

and *B. trirhaphis* (TOPSENT, 1897: 461). VACELET & VASSEUR (1971: 90), identifying with *B. anisotoxa* specimens from Madagascar differing somewhat from the type, would seem favourable to this hypothesis.

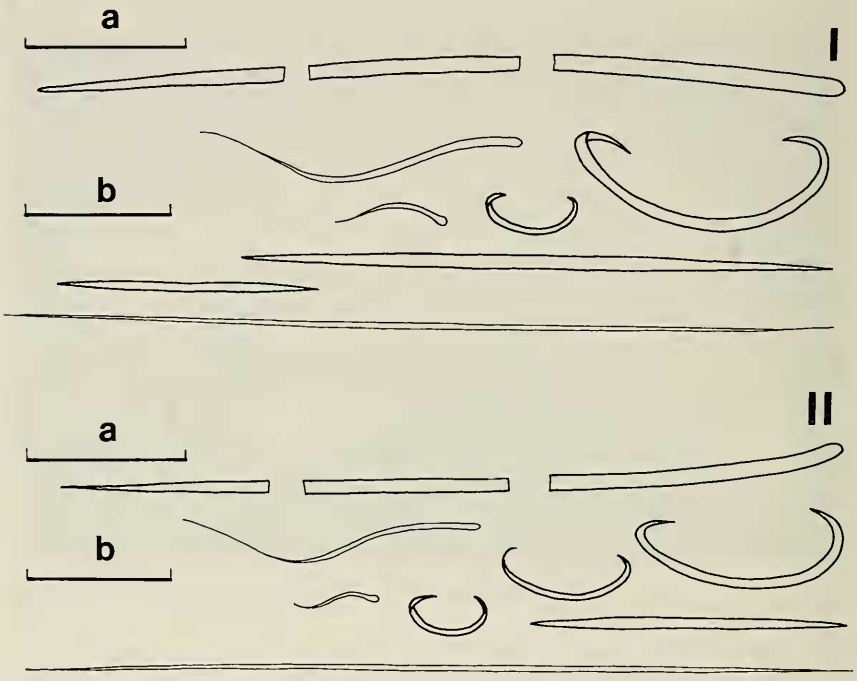


Fig. 58 - Spicules of *Biemna caribea* sp. n. (I) and of *Biemna* sp. (II). Scale a: 50 μm, scale b: 20 μm.

Biemna sp. (Fig. 58)

Occurrence: Bimini (Bahamas), lagoon, depth 1 m, 16 March 1964. R.N. BL.33.

Only a spicule slide is now available. The specimen was ramose, very soft, buff coloured.

Spicules: 1) Styles slightly curved, measuring 270-297 × 4-5 μm. 2) Sigmas with a chord of 11.5-25 μm. 3) Microstyles flexuous, almost toxiform, measuring 32-39 μm. 4) Microxeas fusiform, straight, measuring 23-32 × 0.5 μm. 5) Microxeas (raphides) straight, measuring 108-120 × 0.5 μm. 6) Commas measuring 9-11.5 μm.

The spiculation of this specimen differs from that of *Biemna caribea* sp. n. for its sigmas not separable in two categories, for the lack of the fusiform microxeas of the larger size, for the dimensions, slightly smaller, of all the spicules. I do not deem it opportune at the moment to attribute these differences to a variability of *B. caribea*. But, indeed, this specimen might be regarded as sustaining the hypothesis, mentioned above, of a single, circumtropical, variable species. The difference in spiculation between *B. caribea* and *B.* sp. is practically the same observed between the South African type of *B. anisotoxa* and the specimens from Madagascar.

Neofibularia nolitangere (Duchassaing & Michelotti)

Amphimedon nolitangere Duchassaing & Michelotti, 1864: 82

Occurrence: Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.9, KC.25.
Boca Chica (Dominican Republic) depth 7-8 m, 12 April 1964. R.N. BC.48.
Boca Chica (Dominican Republic), depth 30-40 m, 15 April 1964. R.N. BC.69.

Available are large fragments of sponges noted in the field as walnut-brown with purple tinge externally, tawny internally. The consistency was soft, inelastic, friable.

Spicules: 1) Strongyles curved, measuring 288-354 × 5.5-11.5 μm. 2) Sigmas with a chord of 15-22 μm. 3) Microxeas straight, points elongated and sharp, measuring 105-115 × 2.5 μm. 4) Raphides more or less curved, 87-111 μm long, very thin.

Merlia normani Kirkpatrick

Merlia normani Kirkpatrick, 1908: 510

Occurrence: Off La Parguera (Puerto Rico) drop-off, depth 35 m, 12 May 1964. R.N. SH.18a.

The specimen is a very thin encrustation, about 100 cm^2 wide, on the lower side (the one devoid of polyps) of a foliaceous madreporarian of the genus *Agaricia*. The coral was growing outward in a horizontal plane from a vertical wall. Its upper face is occupied by a boring *Anthosigmella varians*. The colour in life was a bright orange-red, it is cream in the present dry state. No calcareous skeleton is present.

Spicules: 1) Tylostyles measuring 140-170 × 1.5-2 μm. 2) Clavidiscs with a chord of 59-77 μm (average of 25 spicules 68 μm). 3) Microxeas straight, 66-78 μm long, about 1 μm thick, rough and centro-

tylote. 4) Raphides straight, 90-115 μm long, very thin. 5) Commas appearing as reduced toxas, with a chord of 14-18 μm.

Esperiopsidae

Desmapsamma anchorata (Carter)

Fibularia anchorata Carter, 1882: 283

Occurrence: Port Royal (Jamaica), wharf pilings, depth 1-6 m, 23 March 1964. R.N. PR.5, PR.21.
Port Royal (Jamaica), submerged ruins, depth 5-10 m, 27 March 1964. R.N. PR.47, PR.50, PR.51.

The specimens are fragments of generally large individuals, massive to branching, with hollow processes. The consistency was noted as compressible, rather soft, the surface smooth, grooved in one case, the colour dull orange-red externally, orange internally. Preserved in formalin, the specimens are soft and very fragile.

Spicules: 1) Oxeas slightly curved or straight, points short and sharp, measuring 140-190 × 2.3-7 μm. 2) Sigmas with a chord of 11.5-37 μm. 3) Anchorate isochelas measuring 9.5-18.5 μm, rare.

Protophlitaspongia antillana sp. n. (Fig. 59, 60)

Occurrence: Off La Parguera (Puerto Rico), drop-off, depth 25-35 m, 12 May 1964. R.N. SH.19, SH.20.
Sosua (Dominican Republic), depth 10-40 m, 19 April 1964. R.N. SOS.8.

Holotype (SH.20): MSNG 47700

SH.20: cylindrical, 17 cm high, 2.5 cm thick, greenish grey in life.

SH.19: irregularly subcylindrical with a short branch, grey with violet tinges in life.

SOS.8: globose, 5.5 cm high, 3.5 cm wide, grey in life.

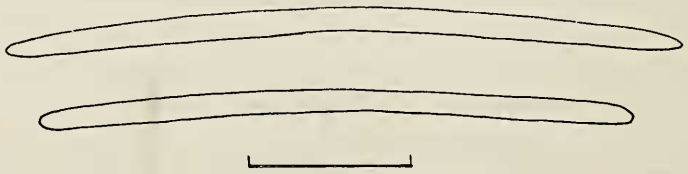


Fig. 59 - Spicules of *Protophlitaspongia antillana* sp. n. Scale: 100 μm.

The structure of the sponge is clathrate, with the cavities up to 6 mm wide. The preserved specimens are stiffly resilient, harsh to the touch, cream to light brown. There is no dermal specialization. The skeleton consists of a very irregular, dense reticulation of plurispicular tracts 40-200 μm thick bound by colourless, not overlapping spongin. The spicules are isodiametric oxeas slightly curved, tending toward a strongylote form. Their size is: SH.20: 160-200 × 4.5-9 μm; SH.19: 170-210 × 4.5-9 μm; SOS.8: 140-200 × 3.5-7 μm.

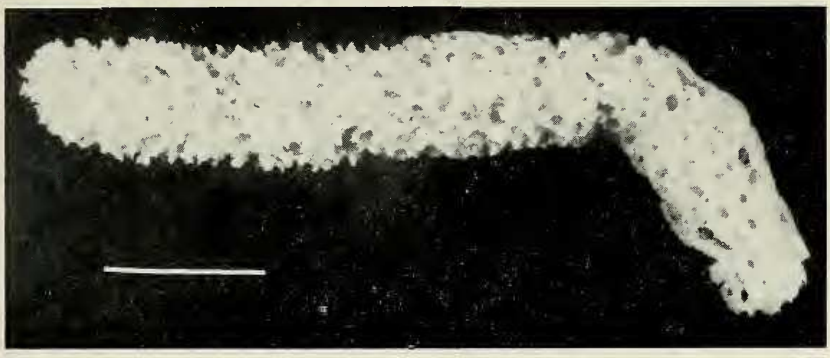


Fig. 60 - *Protophlitaspongia antillana* sp. n., the holotype. Scale: 3 cm.

The genus *Protophlitaspongia* Burton was hitherto known only from southeastern Australia (Dendy, 1895: 246; Burton, 1934: 562) and west-central Pacific (de Laubenfels, 1954: 96, 97).

Iotrochota birotulata (Higgin) (Fig. 61)

Halichondria birotulata Higgin, 1877: 296

Occurrence: S. Domingo, La Caleta (Dominican Republic), depth 2-3 m, 3 April 1964. R.N. SDC.5.
Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.14, KC.16.
La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964. R.N. LP.19.
La Parguera (Puerto Rico), mangrove, depth 0.1-0.5 m, 18 May 1964. R.N. LP.72.
Port Royal (Jamaica), wharf pilings, depth 1-6 m, 23 March 1964. R.N. PR.20.
Duncans (Jamaica), fore-reef slope, depth 40-45 m, 30 March 1964. R.N. NC.6.

Specimen SDC.5 was noted as greenish black, creeping on the bottom. KC.16 is a fragment of a branching sponge with a total height of about 50 cm, branches about 1 cm in diameter. It was black with a greenish tinge in life and emitted upon collection a dark brown exudate.

Yellow zoanthids were present on its surface. LP.19 is a fragment having identical aspect, but devoid of zoanthids. These specimens in formalin are purplish black, rather stiff, not macerated at all. The aculeation of the surface is conspicuous.

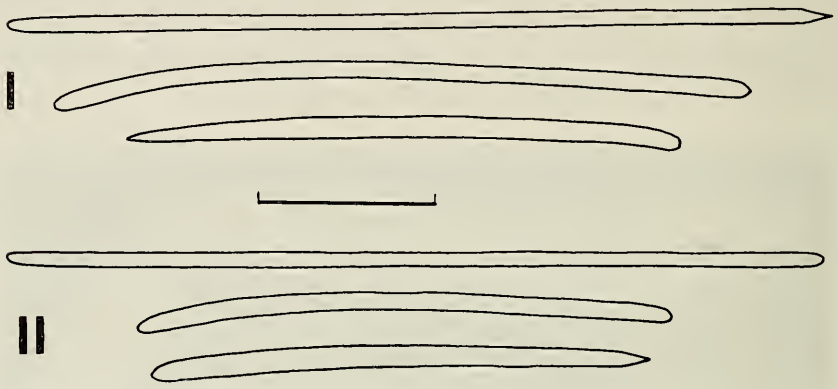


Fig. 61 - Megascleres of *Iotrochota birotulata* (Higgin). I: specimen LP.19, II: specimen LP.72. Scale: 50 μm.

Specimen KC.14 was a soft, mucous, brownish black encrustation on a dead staghorn coral. LP.72, locally abundant, was massive, purplish black, firm, giving off violet mucus. PR.20 was massive, reddish black, emitting abundant exudate. In formalin, these specimens are moderately firm, purplish brown, rather macerated. They do not appear conspicuously aculeated.

Specimen NC.6 is entire, 5 cm high and 5 cm wide. It consists of four cylindrical hollow processes starting from a common restricted base. The processes end with an apical oscule about 1 cm wide. The sponge was stiff, incompressible, olive-green to dark brown in life; it is purplish brown in spirit. Its surface is conspicuously aculeated.

Spicules: 1) Strongyles variable, curved mostly at one third of their length, measuring 120-200 × 2.5-6.5 μm. A variable number of styles (rarely oxeas) are present. Shorter and thicker than the strongyles, with the same curvature, they may be regarded as modified strongyles. 2) Styles thin, straight, isodiametric, with hastate point, measuring 220-250 × 2.5-4.5 μm, not abundant. They are present in specimens SDC.5, KC.16 and LP.19; in all the other specimens this spicule, while keeping the same shape and size, has both extremities strongylote.

3) Birotules not abundant, measuring 9.2-15 μm. Some curiously looped spicules, as observed by WIEDENMAYER (1977: 139) are present in specimen NC.6.

Iotrochota imminuta sp. n. (Fig. 62, 63)

Occurrence: N. Providence, Sandy Cay (Bahamas), depth 2-3 m, 15 February 1963. R.N. 1071.
Staniel Cay, Exumas (Bahamas), cave, depth 2-3 m, 3 March 1963. R.N. 1122.
N. Providence, Rose Island (Bahamas), depth 2-4 m, 24 January 1963. R.N. 1090.

Holotype (1122:) MSNG 47701

The specimens are irregularly branching and anastomosing, conspicuously conulose, stiff, purplish black in formalin and dry. 1122 and 1071 are infested by a zoanthid. 1090 has been noted as dark green (C.C.426, 427) in life. At sight, the three samples are not distinguishable from specimens of *Iotrochota birotulata*.

The skeletal reticulation consists of spicular tracts, dense and more or less confused, embedded in abundant, overlapping spongin. The

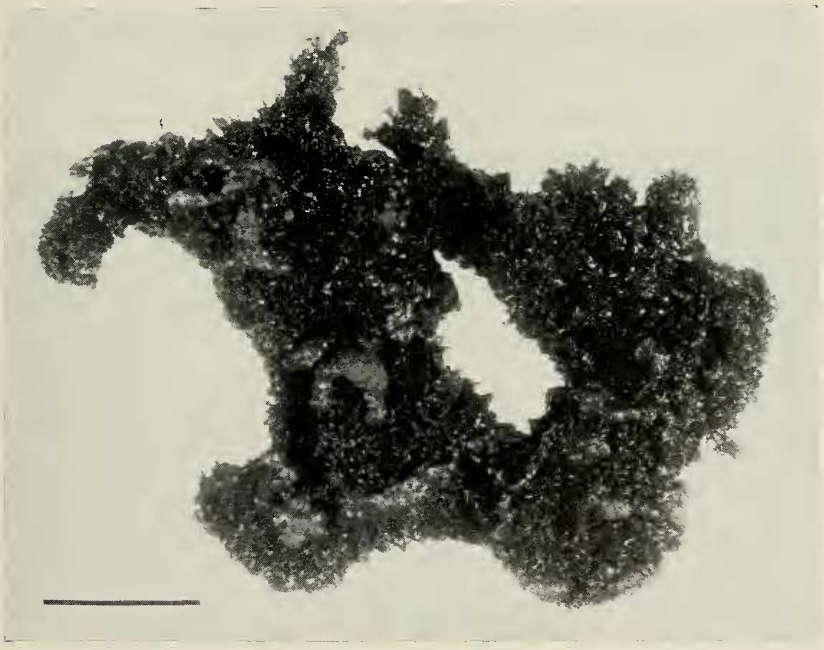


Fig. 62 - *Iotrochota imminuta* sp. n., the holotype. Scale: 2.5 cm.

main fibres are 100-250 μm thick, the secondary ones 35-100 μm thick, the meshes are 150-300 μm wide. The spicules are also found abundantly scattered.

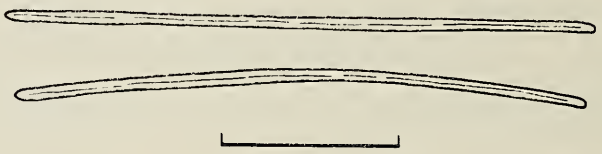


Fig. 63 - Spicules of *Iotrochota imminuta* sp. n. Scale: 50 μm.

The only spicule present is a thin strongyle, straight or slightly and irregularly curved, measuring 150-190 × 2.5 μm. Its wide axial canal is evident and generally appears blackened in the preparations.

Bahamian specimens belonging to this species were in the « Argo » collection studied by Higgin (1877: 298); They have been also recorded (as *Iotrochota birotulata*) by Wiedenmayer (1977: 138).

Monanchora barbadensis Hechtel (Fig. 64, 65)

Monanchora barbadensis Hechtel, 1969: 21

Occurrence: Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.1, KC.2.
La Parguera (Puerto Rico), depth 5-8 m, 9 May 1964. R.N. LP.95.

KC.1 (two specimens): erect, subcylindrical, branching, 30 and 45 cm high, maximum diameter 8 mm, branches distally tapering. Colour in life red to bright orange-red, in formalin light brownish yellow (about C.C.249). Consistency resilient, flexible. Surface beset with irregular folds and prominences.

KC.2: from an encrusting base spreading on a branch of dead coral many stemmed fronds arise which widen, anastomose, forming an intricate bush of clathrous lamellae, 10 cm high, 5 cm across.

LP.95: dry, an amorphous mass about 2 cm in diameter. It was noted in life as frondose, deep red.

The skeleton is plumoreticulated, with fibres of light brown spongin up to 180 μm thick, with meshes smaller than 180 μm. The fibres are irregularly and sparsely cored by the megascleres, which also join the fibres singly or in irregular tracts.

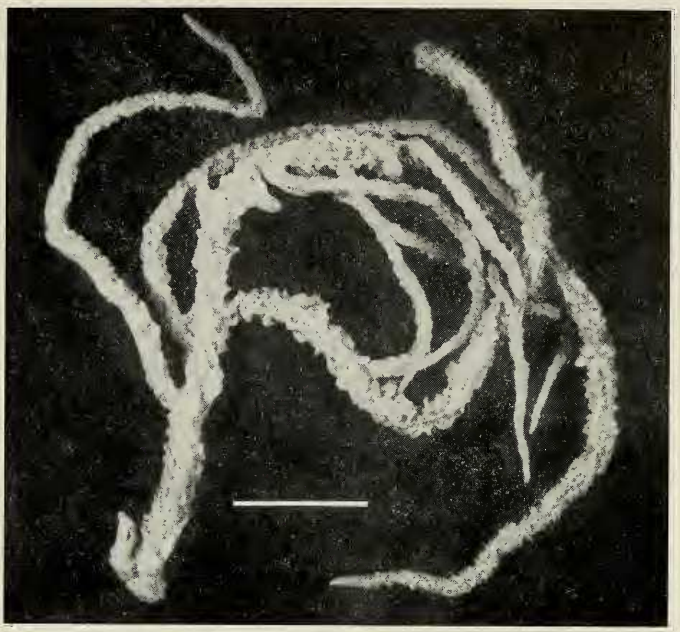


Fig. 64 - *Monachora barbadensis* Hechtel, specimen KC.1. Scale: 3 cm.

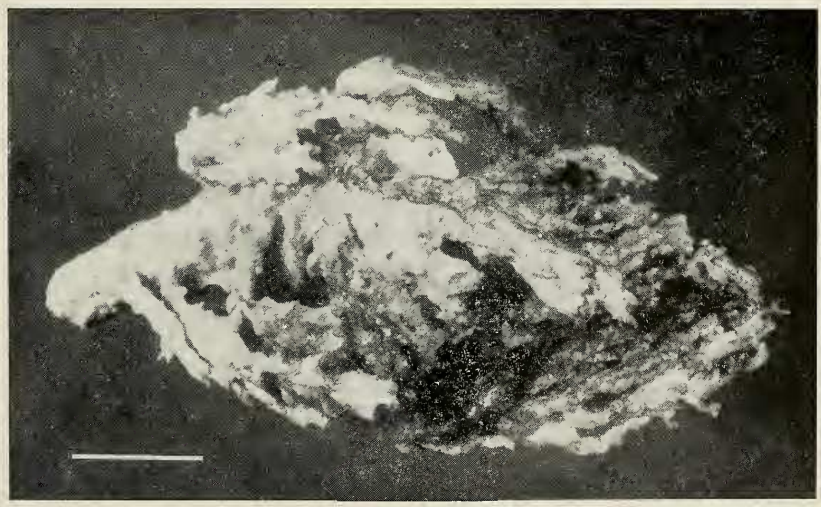


Fig. 65 - *Monachora barbadensis* Hechtel, specimen KC.2. Scale: 2 cm.

Spicules: 1) Subtylostyles measuring 200-290 × 4.5-8 μm. 2) Subtylostyles measuring 180-330 × 2-4 μm. 3) Isochelas unguiferate with a chord of 18.5-21 μm. 4) Isochelas unguiferate (resembling sigmas) with a chord of 7-11 μm.

The difference in habit and skeletal frame between these specimens and those of this species previously recorded is certainly considerable. HECHTEL's type was thinly encrusting with a hymedesmoid skeleton, VAN SOEST's specimens (1984: 40) were encrusting with only a few instances of small elevated laminations – and the skeleton consisted of loose tracts. However, a specific separation does not appear practicable, because the spiculation is identical.

LATRUNCULIIDAE

Didiscus oxeatus Hechtel

Didiscus oxeata Hechtel, 1983: 76

Occurrence: Staniel Cay, Exumas (Bahamas), cave, depth 5 m, 3 March 1963. R.N. 1126.

Off La Parguera (Puerto Rico), drop-off, depth 30-35 m, 12 May 1964. R.N. SH.17.

1126: cushion-shaped, 4.5 cm wide, 1.5 cm thick. In the dry state, the specimen is light, fragile.

SH.17: a fragment of a large cushion-shaped individual (the fragment measures 8 × 4 × 2 cm), bright yellow in life, cream in formalin, weak and fragile.

Ridges dividing the surface in poligonal sections, as recorded for *Didiscus placospongioides* DENDY (1921: 135) and for *D. styliferus* TSURNAMAL (1969: 343) are observable in specimen 1126. The ectosome of the same, supported by a tangential layer of oxeas, is separable.

Spicules: 1) Oxeas curved, measuring 200-1400 × 4.5-23 μm. 2) Discorhabds spiny, ends normally strongylote but sometimes oxeote. In specimen 1126 the rhabdome measures 56-66 × 3.5-4.5 μm, the discs 9-11.5 μm and 11.5-16 μm; in specimen SH.17 the rhabdome measures 70-82 × 4.5-7 μm, the discs 11.5-16 μm and 16-18.5 μm.

I have observed the characteristic discorhabds of the genus, as foreign material, also in preparations from the south coast of Hispaniola and the north coast of Jamaica.

Myxillidae

Acarnus innominatus Gray (Fig. 69)

Acarnus innominatus Gray, 1867: 544

Occurrence: Boca Chica (Dominican Republic), depth 2-3 m, 11 April 1964. R.N. BC.22.

A very small fragment is available. The sponge was incrusting and insinuating, its colour was reddish to orange-brown.

Spicules: 1) Styles straight or slightly, uniformly curved, measuring 340-390 × 9-18 μm. 2) Tylotes straight or sinuous, measuring 220-280 × 2.5-4 μm. The tyles are spiny. 3) Cladotylotes smooth, with a

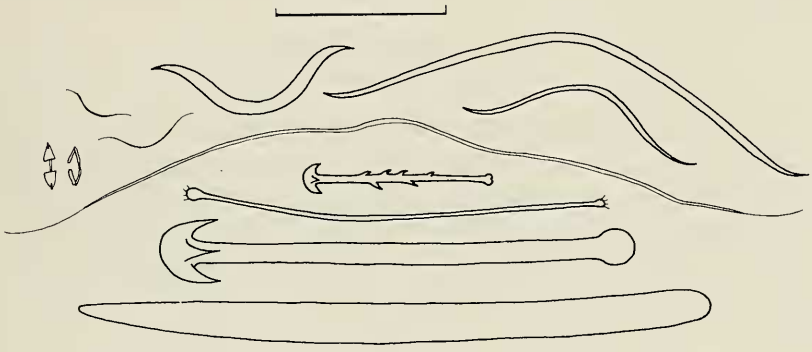


Fig. 66 - Spicules of *Acarnus innominatus* Gray, specimen BC.22. Scale 100 μm.

round base, measuring 230-280 × 9-11 μm. 4) Cladotylotes spiny, with a smooth base, measuring 80-130 × 2.5-3.5 μm. 5) Toxas very varied, from 37 to 550 μm long, having a thickness not proportioned to length. The longer ones are always thin (about 2.5 μm) and are characterized by the fact that, besides the central flexion, each arm has a double curvature. 6) Isochelas measuring 9.5-14 μm.

Myxilla mucronata sp. n. (Fig. 67)

Occurrence: Port Royal (Jamaica), wharf pilings, depth 1-6 m, 23 March 1964. R.N. PR.3.

Port Royal (Jamaica), submerged ruins, depth 5-10 m, 27 March 1964. R.N PR.54.

Holotype (PR.3): MSNG 47702

PR.3: an amorphous mass, soft, mucous, pervaded with algae and

polychaete tubes, bright orange-red in life.

PR.54: thin encrustation on *Arca*, orange-red.

The skeleton consists of an isodictyal reticulation of acanthostyles forming meshes 60-90 μm wide with sides made by two to five spicules bound by scarce transparent spongin.

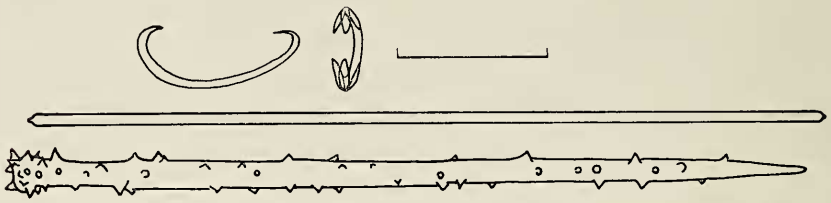


Fig. 67 - Spicules of *Myxilla mucronata* sp. n. Scale: 30 μm.

Spicules: 1) Acanthostyles straight, measuring 110-130 × 3-5 μm, spines sparse, more developed at the base. A slight thinning of the shaft at a distance of 10-20 μm from the basal end is characteristic. 2) Strongyles straight, measuring 120-150 × 2-2.5 μm. Their ends are mucronated. 3) Isanchoras with a chord of 12.5-18 μm. 4) Sigmas with a chord of 16-32 μm.

Lissodendoryx isodictyalis (Carter)

Halichondria isodictyalis Carter, 1882: 285

Occurrence: Bimini (Bahamas), lagoon, depth 1 m, 16 March 1964. R.N. BL.32, BL.34.

Only spicule slides are now available. The colour of specimen BL.34 was noted as bright orange.

Spicules: 1) Styles to subtylostyles. In BL.34 they are styles with the base slightly narrower than the middle. They measure 140-175 × 2.5-4 μm. In BL.32 they are subtylostyles slightly shorter and thicker, 145-155 × 3-4.5 μm. 2) Tylotes. In both specimens they measure 185-200 × 2.5-4 μm. 3) Sigmas. They measure 18.5-21 μm in specimen BL.32. In BL.34, besides sigmas of the same size, there is a distinct category measuring 34.5-40 μm. 4) Isochelas arcuate. There is one category in BL.32, with a chord of 20.5-24 μm. There are two categories in BL.34: 19.5-24 μm and 10-11.5 μm.

Lissodendoryx sigmata (Laubenfels)

Xytopsene sigmatum Laubenfels, 1949: 15

Occurrence: Bimini (Bahamas), lagoon, depth 1 m, 16 March 1964. R.N. BL.12.

The specimen was thinly encrusting, yellow, soft.

Spicules: 1) Tylotes measuring 230-300 × 4-5.5 μm. 2) Isochelas arcuate with a chord of 20-27 μm. 3) Isochelas arcuate with a chord of 11.5-14 μm. 4) Sigmas with a chord of 55-60 μm. 5) Sigmas with a chord of 11-15 μm.

Tedaniidae

Tedania ignis (Duchassaing & Michelotti)

Thalysias ignis Duchassaing & Michelotti, 1864: 97

Occurrence: La Parguera (Puerto Rico), mangrove, depth 0.5-1 m, 3 May 1964. R.N. LP.10.
Duncans (Jamaica), drop-off, depth 40-45 m, 30 March 1964. R.N. NC.8.
La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964. R.N. LP.27, LP.30.
Port Royal (Jamaica), wharf, depth 1-6 m, 23 March 1964. R.N. PR.4.
Port Royal (Jamaica), mangrove, depth 0.5-1 m, 23 March 1964. R.N. KM.9.
Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.21.
Bimini (Bahamas), lagoon, depth 0.5-1 m, 16 March 1964. R.N. BL.2.
Boca Chica (Dominican Republic), depth 4-5 m, 18 April 1964. R.N. BC.73.

Spicules: 1) Tylostyles 220-280 × 5-7 μm. 2) Tylotes 200-250 × 5 μm. 3) Onichaetes 40-240 × 1-2 μm.

Psammascidae

Holopsamma helwigi Laubenfels

Holopsamma helwigi Laubenfels, 1936: 97

Occurrence: Boca Chica (Dominican Republic), depth 4-5 m, 18 April 1964. R.N. BC.74.
La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964. R.N. LP.38.
Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.20.

BC.74: irregularly massive. Pink outside, red inside. Light orange in formalin. Extremely fragile.

LP.38: digitate, branching, anastomosing. Light red. Light cream in the dry state. Extremely fragile.

KC.20: irregularly branched, partly lamellate. Bright pink-orange,

interior deeper shade. Light dull orange in formalin. Mucous, soft and fragile. Locally very common.

The ectosomal skeleton is distinct, consisting of a network having meshes 50-60 μm wide. This structure is obscured by the fact that the sides of the meshes are made by numerous scarcely aligned spicules together with grains of sand. The choanosomal skeleton consists of ascending parallel main tracts 100-150 μm apart very irregularly joined by secondary ones and by variously grouped spicules. A large quantity of foreign material is present.

Spicules: Oxeas measuring 140-190 × 2-5.5 μm.

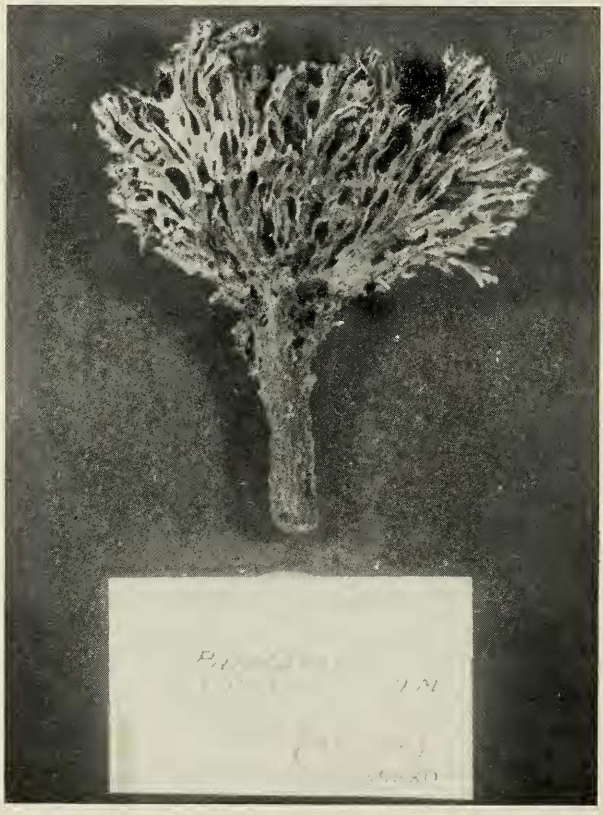


Fig. 68 - Paralectotype of *Pandaros acanthifolium* D. & M. (MSNG).

Clathriidae

Pandaros acanthifolium Duchassaing & Michelotti (Fig. 68)

Pandaros acanthifolium Duchassaing & Michelotti, 1864: 90

Occurrence: La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964. R.N. LP.18, LP.31.
Providence Island (Bahamas), 15 February 1963. R.N. 1070.

The specimens are bushy and pedunculate. Their colour in life, maintained in formalin, was dark violet, almost black. They gave off a purplish exudate.

Spicules: 1) Subtylostyles measuring 190-370 × 6.5-14 μm. 2) Subtylostyles having the same thickness but 700-1000 μm long, rare. 3) Acanthosubtylostyles measuring 170-240 × 6.5-14 μm. 4) Oxeas measuring 300-380 × 1.5-2 μm, flexuous, rare.

The longer subtylostyles are extremely rare, but are present in my specimens and in the type material I have examined. The acanthosubtylostyles are rather frequent and distinctly spined in specimen LP.18, rare and feebly spined in specimen 1070. I found them very rare in the type specimen at the Turin Museum and apparently absent in the one at the Genoa Museum. About the latter, which was assumed to be a fragment, I would mention that it is a complete individual and appears to be the very one which Duchassaing & Michelotti figured (1864: Pl. XX, Fig. 2).

Microciona ferrea (Laubenfels)

Fisherispongia ferrea Laubenfels, 1936a: 460

Occurrence: La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964. R.N. LP.46.

Encrusting on dead *Porites*. Orange-red.

Spicules: 1) Subtylostyles polytylote, measuring 180-350 × 2-3.5 μm. Some are faintly spined at the base. 2) Subtylostyles measuring 85-460 × 3-11.5 μm, rarely faintly spined at the base. 3) Toxas with a chord of 37-100 μm, 2 to 3.5 μm thick. 4) Isochelas palmate mostly twisted, with a chord of 9.5-11.5 μm.

Microciona bulbotoxa (Soest)

Clathria (*Microciona*) *bulbotoxa* Soest, 1984: 103

Occurrence: Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964. R.N. BY.7.

The specimen was thinly encrusting, slimy.

Spicules: 1) Subtylostyles ectosomal, entirely smooth, measuring 220-465 × 2.5-4.5 μm. 2) Subtylostyles choanosomal, entirely smooth, measuring 220-600 × 11.5-18.5 μm. 3) Toxas peculiar, characteristic, with a chord of 19-205 μm. 4) Isochelas palmate, mostly twisted, with a chord of 11.5 μm.

Microciona calla (Laubenfels)

Axociella calla Laubenfels, 1934: 16

Occurrence: Off La Parguera (Puerto Rico), depth 30-35 m, 12 May 1964. R.N. SH.9.

The specimen is enveloping uniformly, 3 mm thick, the stem of a dead gorgonarian. Its colour in life was dark red. The consistency is tough, resilient. The skeleton is a reticulation of strong fibres of light yellow spongin, 20 to 100 μm thick, forming meshes 300-400 μm wide. The fibres are scarcely and discontinuously cored and echinated.

Spicules: 1) Styles measuring 80-245 × 5.5-11.5 μm. Their proximal part is narrower than the middle one. 2) Subtylostyles measuring 165-260 × 2 μm. 3) Toxas with a chord of 29-37 μm, less than 1 μm thick. 5) Isochelas palmate measuring 23-27.5 μm.

Clathria simpsoni (Soest)

Clathria (*Microciona*) *simpsoni* Soest, 1984: 97

Occurrence: Port Royal (Jamaica), submerged ruins, depth 5-10 m, 27 March 1964. R.N. PR.55.

The specimen, fragmented, is partly bushy, partly consisting of coalescent tubes up to 9 cm high, 3 cm in diameter, wall 0.5 cm thick. The colour in life was bright cardinal-red, in formalin it is light brown. The consistency is rigid, inelastic. The skeletal reticulation is dense and irregular, made by fibres of light yellow spongin, 40 to 370 μm thick, not uniformly cored and echinated.

Spicules: 1) Styles measuring 180-570 × 5.5-16 μm. Their base is narrower than the middle part. 2) Styles ectosomal, measuring 230-410 × 2-4 μm. 3) Isochelas palmate with a chord of 18.5-23 μm. 4) Cleistochelas with a chord of 18.5-35 μm. 5) Toxas with a chord of 46-74 μm. They are extremely rare in my preparations. 6) Toxas with a chord of 270-840 μm, up to 4.5 μm thick.

Rhaphidophlus raraechelae Soest

Rhaphidophlus raraechelae Soest, 1984: 116

Occurrence: Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.26.

Thinly encrusting on dead coral, slimy, orange-red in life.

Spicules: 1) Styles choanosomal, straight or slightly curved, measuring 230-500 × 7-11.5 μm. 2) Styles to subtylostyles ectosomal, straight, measuring 280-470 × 3.5-5 μm. 3) Subtylostyles ectosomal, straight, measuring 110-160 × 1-2 μm. 4) Acanthotylostyles measuring 50-80 × 3.5-4.5 μm, with tyle and distal half more thickly spined. 5) Toxas with a chord of 100-130 μm, immeasurably thin, extremely rare. No chelas have been observed.

Rhaphidophlus juniperinus (Lamarck)

Spongia juniperina Lamarck, 1813: 444

Occurrence: Boca Chica (Dominican Republic), depth 4-5 m, 18 April 1964. R.N. BC.77.

S. Domingo, La Caleta (Dominican Republic), depth 2-4 m, 3 April 1964. R.N. SDC.7.

Boca de Yuma (Dominican Republic), depth 15-25 m, 17 April 1964. R.N. BY.13.

Bimini, Rabbit Cay (Bahamas), depth 2-3 m, 13 March 1964. R.N. RC.7b.

La Parguera (Puerto Rico), depth 7-15 m, 6 May 1964. R.N. LP.45.

Spicules: 1) Styles measuring 200-360 × 7-14 μm. 2) Subtylostyles measuring 200-360 × 4.5-6 μm. 3) Subtylostyles measuring 100-200 × 2.5-4.5 μm. 4) Isochelas palmate with a chord of 12-14 μm. 5) Toxas with a chord of 35-80 μm, less than 1 μm thick. 6) Toxas irregular, raphidiform, less than 1 μm thick, 200 μm and more long.

Chelas and toxas may be rare or missing in some preparations.

PETROSIDA

PETROSIIDAE

Petrosia weinbergi Soest (Fig. 69)

Petrosia weinbergi Soest, 1980: 75

Occurrence: Boca Chica (Dominican Republic), depth 30-40 m, 15 April 1964. R.N. BC.61.

Off La Parguera (Puerto Rico), depth 25-35 m, 12 May 1964. R.N. SH.23, SH.33, SH.11.

BC.61: laminar, 5-6 mm thick, hard but fragile, infested by white zoanthid. Colour in life violet-brown on one side, tawny on the other one. In formalin the colour is olive-brown. Oscules, about 1 mm wide, are present on only one side, the lighter one. Spicules: oxeas stout, regularly curved, with short points, which may be regarded as belonging to three categories: 250-290 × 13.5-15 μm, 55-170 × 9-11.5 μm, 23-40 × 2.5-4.5 μm.

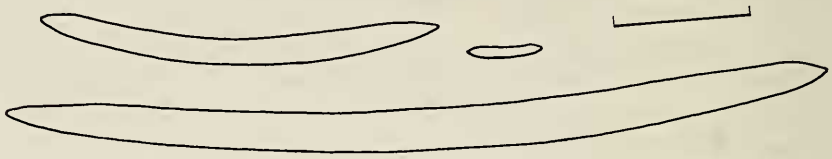


Fig. 69 - *Petrosia weinbergi* Soest. Spicules of specimen BC.61. Scale: 50 μm.

SH.23: fragmented, lamellar, 5-7 mm thick, infested by zoanthid. In life dark violet, interior tan; now light greenish drab. Fragile. No oscules apparent. Spicules: oxeas measuring from 37 × 3 μm to 280 × 14 μm. They have the same character as in BC.61, but some strongylote modifications are present. The spicules are not clearly separable in categories. The sponge is locally common.

SH.33: fragments of large laminar sponge, 8 mm thick. Oscules 1-2 mm wide, about 5 mm apart, on one side only. Colour in spirit dull dark green. Spicules: Oxeas with short rounded ends, almost strongylote, measuring 50-280 × 5.5-14 μm.

SH.11: only a fragment is available, consisting of a thick-walled tube with an apical vent. The tube is 6 cm high and has a diameter of 3.5 cm, the vent is 15 mm wide. The colour in life was brown externally, tan internally, in formalin it is olive-brown. The consistency was hard and fragile. There is a considerable difference in form between this specimen and the laminar ones, but colour, consistency and spiculation are identical. The oxeas tend to a strongylote form and may be regarded as belonging to three sizes: 23-39 × 3.5-4.5 μm, 65-150 × 9-14 μm and 230-280 × 12-14 μm.

Petrosia pellasarca (Laubenfels) (Fig. 70)

Haliclona pellasarca Laubenfels 1934: 23

Occurrence: Boca Chica (Dominican Republic), depth unknown (less than 40 m), April 1964. R.N. BC.98.

The specimen (apparently incomplete), in the dry state, is laminar, 5 to 10 mm thick, 7 × 5 cm wide, shaped like a cup cut in two. The concave side is in large part overgrown by a calcareous alga; the convex side is riddled with apertures about 0.5 mm wide and 1.5 mm apart. The consistency is woody, the colour light yellowish brown. The ectosomal skeleton consists of a regular tangential network of single oxeas forming meshes a little narrower than the length of a spicule. From each knot a brush of microxeas arise. The choanosomal skeleton is an isotropic reticulation of single oxeas.

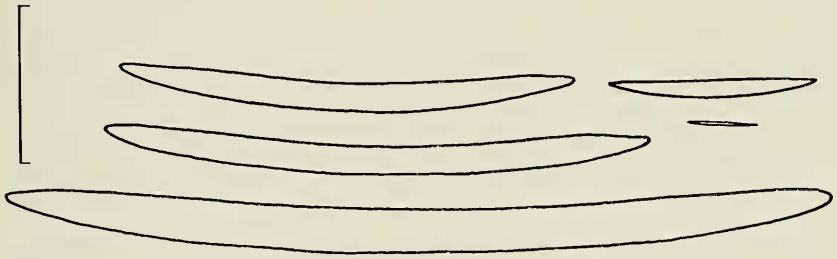


Fig. 70 - Spicules of *Petrosia pellasarca* (Laubenfels). Scale: 50 μm.

Spicules: 1) Oxeas slightly curved, with short, well formed extremities, measuring 140-260 × 4.5-11.5 μm. 2) Microxeas measuring 30-70 × 1-2.5 μm. Some intermediates (rare) are present.

This specimen corresponds to the sponge erroneously attributed to *Haliclona* by DE LAUBENFELS, which VAN SOEST (1980: 80) recognized as belonging to the Petrosiidae and now (personal communication), places in *Petrosia*.

Xestospongia muta (Schmidt)

Schmidtia muta Schmidt, 1870: 44

Occurrence: La Parguera (Puerto Rico), depth 20 m, May 1964. R.N. LP.92.
Off La Parguera (Puerto Rico), shelf edge, depth 25-30 m, 12 May 1964. R.N. SH.15.
Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964. R.N. BY.9, BY.38.
Boca Chica (Dominican Republic), depth 7-8 m, 11 April 1964. R.N. BC.29, BC.47.

Only fragments have been kept. The specimens were all large, vase-shaped, up to 50 cm in diameter; at Boca de Yuma some were noted measuring almost 1 m. The colour was brown externally, tan internally; a violet tinge was always present. The spicules are oxeas with short and obtuse points. Sizes in μm:

BC.29: 340-410 × 11.5-16.5	SH.15: 340-420 × 9-16
BC.47: 350-420 × 11.5-18.5	LP.92: 280-420 × 9-16
BY.9 : 345-430 × 7-16	BY.38: 310-370 × 7-14

Xestospongia subtriangularis (Duchassaing) (Fig. 71)

Spongia subtriangularis Duchassaing, 1850: 26

Occurrence: La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964. R.N. LP.25, LP.101.
Boca Chica (Dominican Republic) depth 30-40 m, 15 April 1964. R.N. BC.65.
Duncans (Jamaica), drop-off, depth 35 m, 30 March 1964. R.N. NC.32.
Kingston (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.7.
Boca Chica (Dominican Republic), depth 4-5 m, 18 April 1964. R.N. BC.80.
Port Royal (Jamaica), wharf pilings, depth 1-6 m, 23 March 1964. R.N. PR.17, PR.59.

PR.17: massive, oscules 5 mm wide on elevations, tough, inelastic, interior sticky, friable. Colour in life light violet to light orange-cream. The ectosomal skeleton is made by plurispicular tracts 50-100 μm

Fig. 71 - The specimen of *Thalysias subtriangularis* Duchassaing in the D. & M. collection at the Turin Museum.

thick, forming roundish meshes 190-260 μm wide. The choanosomal skeleton is a similar reticulation obscured by a large number of spicules in confusion.

BC.80: two fragments of a small, globose sponge. Oscules in rows, 1 to 2 mm wide. Colour in life brown. Consistency hard. The ectosomal skeleton is a regular, plurispicular reticulum of tracts about 90 μm thick forming roundish meshes 130-170 μm wide.

LP.25, BC.65: cylindrical, anastomosing, incompressible, woody but easy to break. Colour in life dull dark violet, interior tan. Densely perforated by a zoanthid. These samples agree closely with the specimen of *Thalysias subtriangularis* in the Duchassaing & Michelotti collection at the Turin Museum.

NC.32: fragment of cylindrical branching specimen 1.5 cm in diameter. Oscules in a line, 5 mm wide, 15 mm apart. The colour in life was purplish brown, interior tan; it is cream in formalin.

PR.59: small, subcylindrical, colour in life olive-brown with purplish tint, interior tan; cream when dry. Stony hard.

KC.7: fragment, irregularly cylindrical, infested by zoanthid. Colour in life dark violet-brown externally, tawny internally.

LP.101: fragment of cylindrical, irregularly branching, repent sponge. Oscules on the upper side. Colour in life olive-brown.

The spicules are oxeas. Sizes in μm:

PR.17: 140-190 × 4.5-9	BC.80: 110-140 × 4.5-7
LP.25: 148-167 × 5.7-8	BC.65: 158-167 × 7-9
NC.32: 140-160 × 5-7	PR.59: 140-170 × 5-9
KC.7: 130-160 × 4.5-7	LP.101: 140-170 × 5-9

In the Turin specimen they measure 143-158 × 4.5-7 μm.

Xestospongia dominicana sp. n. (Fig. 72, 73)

Occurrence: Boca Chica (Dominican Republic), depth 20 m, 27 April 1964. R.N. BC.87.

Holotype: MSNG 47703

A small fragment is available. The sponge was subcylindrical, 2.5-3 cm in diameter, brown, firmly resilient, densely infested by a zoanthid. In the dry state it has the consistency of cork. Oscules are flush, sparse, 2 mm wide. At the surface the skeleton is a not separable

reticulation of spicular tracts which form not quite distinct meshes about 350 μm wide. Around the perforations made by the zoanthid there is a collar of spicules accumulated in confusion. The choanosomal reticulation of irregular tracts forming meshes of 500-700 μm is obscured by a large number of spicules in disorder.

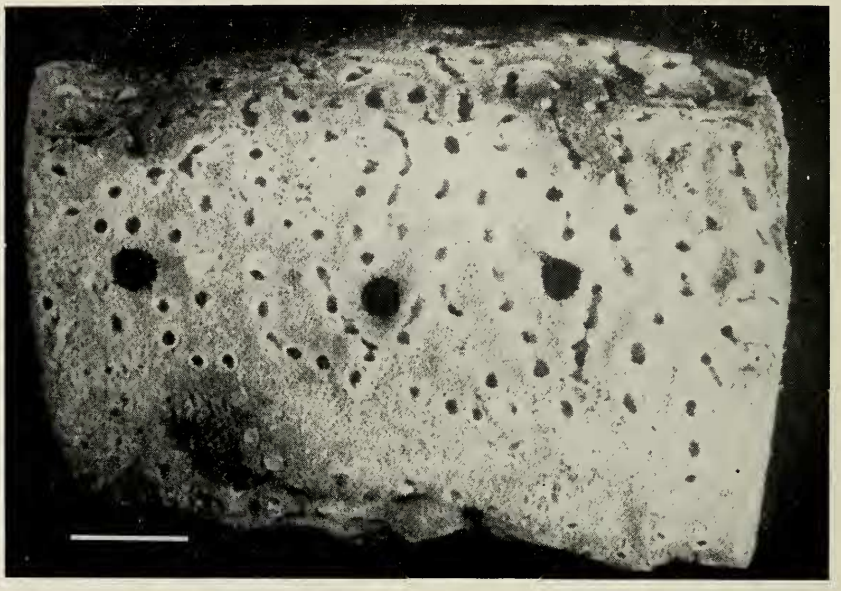


Fig. 72 - *Xestospongia dominicana* sp. n., the holotype. Scale: 1 cm.

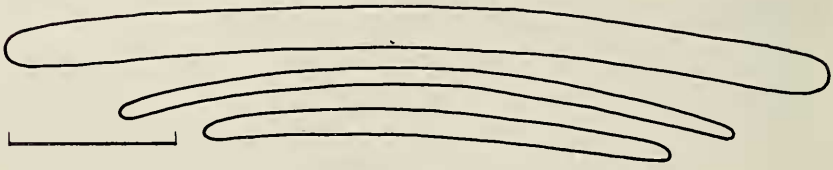


Fig. 73 - Spicules of *Xestospongia dominicana* sp. n. Scale: 50 μm.

Spicules: strongyles slightly curved, measuring 140-260 × 5-14 μm. No distinct categories are recognizable.

Xestospongia caminata sp. n. (Fig. 74, 75)

Occurrence: Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.18.
La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964. R.N. LP.36.

Holotype (KC.18): MSNG 47704

Paratype (LP.36): MSNG 47705

KC.18: not entire, it measures 12 × 8 × 4 cm. It is massive with partly coalescent elevated lobes each bearing on top an oscule 5 to 10 mm wide. The surface is smooth, the pores are 500-800 μm wide, 400-1000 μm apart. In life the sponge was inelastic and brittle, purplish brown externally, tawny internally. In formalin the colour is tan with purplish tinges here and there.

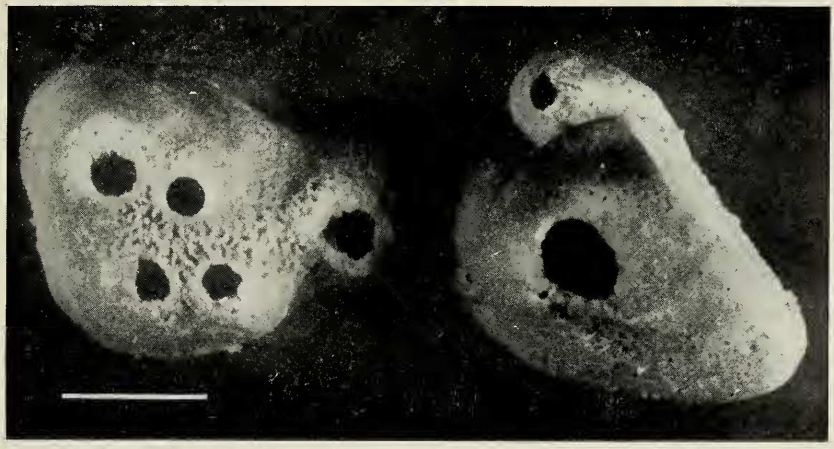


Fig. 74 - *Xestospongia caminata* sp. n., the holotype. Scale: 2 cm.

LP.36: fragments of a large, irregularly massive sponge. Colour in life from violet to olive-brown, interior tan. Hard, fragile. Oscules about 9 mm wide on bulbous or digitate processes.

The skeleton is a network of ill-defined tracts forming meshes 200-300 μm wide. This reticulation is obscured by a large number of spicules in confusion. At the surface the tracts are a little thicker and more distinct, the meshes a little wider. The ectosome is not separable.

Spicules: in specimen KC.18 the spicules are oxeas to strongyles measuring 200-280 × 5-14 μm. Pure oxeas and pure strongyles are

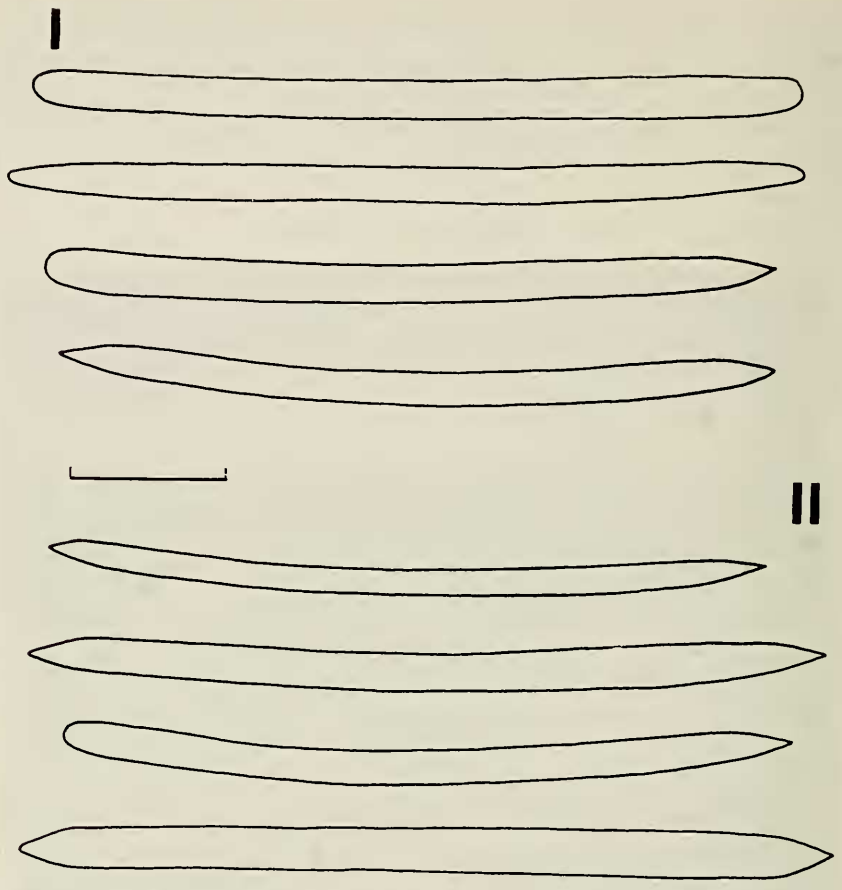


Fig. 75 - Spicules of *Xestospongia caminata* sp. n. I: specimen KC.18, II: specimen LP.36. Scale: 50 μm.

present in a large number, but they are not separable in two categories owing to the quantity of intermediate forms. In specimen LP.36 the spicules are oxeas measuring 210-260 × 6-14 μm, rarely subject to strongylote modifications.

Oceanapiidae

Oceanapia bartschi (Laubenfels)

Inflatella bartschi Laubenfels, 1934: 21

Occurrence: Duncans (Jamaica), depth 40-45 m, 30 March 1964. R.N. NC.2.

The specimen in life was olive-green, with mustard interior; in formalin it is dark brown (about C.C.686). The fistules (broken) are 3 to 5 mm wide, 5 to 15 mm apart.

Spicules: Strongyles straight to slightly curved, measuring 270-340 × 6-10 μm.

Oceanapia fistulosa (Bowerbank)

Desmacidon fistulosa Bowerbank, 1873: 19

Occurrence: Duncans (Jamaica), depth 50 m, 30 March 1964. R.N. NC.10. Punta Salinas (Dominican Republic), on beach, 4 April 1964. R.N. SDS.5.

Specimen NC.10 was growing below sand, with only its fistular outgrowths emerging. The colour was whitish. The surface is encrusted by various debris, the fistules are partly enveloped by a calcareous alga. The ectosomal skeleton consists of an irregular reticulation of single spicules supported by an underlying strong network of multispicular tracts 30-90 μm thick, forming irregular meshes less than 700 μm wide. The choanosomal skeleton is a dense and confused reticulation of single spicules, with rare plurispicular tracts having no definite course.

Spicules: 1) Oxeas slightly curved, often slightly sinuous, measuring 250-300 x 4.5-9.5 μm. 2) Oxeas measuring 80-110 x 3-4 μm, abundant in the ectosome.

Pellina carbonaria (Lamarck)

Spongia carbonaria Lamarck, 1814: 375

Occurrence: La Parguera (Puerto Rico), depth 0.5 m, 3 May 1964. R.N. LP.2. Port Royal (Jamaica), wharf pilings, depth 1-6 m, 23 March 1964. R.N. PR.18. Off La Parguera (Puerto Rico), drop-off, depth 35 m, 12 May 1964. R.N. SH.12.

LP.2: various fragments of an irregularly lobate to ramose sponge, almost black in life. It coloured the fixing spirit greenish black and is now deep black. This species was locally common, growing mostly on *Porites*, often half buried in sand. The ectosome, separable, is supported by a dense tangential reticulation uni- to plurispicular, forming irregular meshes only 45 to 90 μm wide. There are wide subdermal spaces. The choanosomal skeleton is a dense irregular reticulation of plurispicular tracts with many spicules in confusion. The spicules are oxeas measuring 180-225 x 4-9.5 μm.

PR.18: massive, incompressible, greenish black in life, black in formalin. The oxeas measure 200-235 x 5-12.5 μm.

SH.12: thickly encrusting, stiff, fragile, greenish black in life, dark brown in the dry state. Oscules sparse 7-8 mm wide; no oscular tubes have been observed. The dermal skeletal network is unispicular. The oxeas measure 185-225 x 5-11.5 μm.

HAPLOSCLERIDA

Renieridae

Haliclona hogarthi Hechtel

Haliclona hogarthi Hechtel, 1965: 20

Occurrence: La Parguera (Puerto Rico), depth 5-8 m, 9 May 1964. R.N. LP. 22, LP.97, LP.99, LP.35.
La Parguera (Puerto Rico), mangrove, depth 1 m, 18 May 1964. R.N. LP.76.
Port Royal (Jamaica), mangrove, depth 0-1.5 m, 23 March 1964. R.N. KM.8.

The specimens are small, lobate, with wide oscules, soft, lavender to violet in life. The skeleton is a unispicular reticulation. The oxeas are fusiform, straight or slightly curved, measuring (in the various specimens) 100-180 x 4.5-9 μm.

Adociidae

Adocia albifragilis Hechtel

Adocia albifragilis Hechtel, 1965: 28

Occurrence: La Parguera (Puerto Rico), depth 0.5 m, 9 May 1964. R.N. LP.57.

The sponge, now in small fragments, was thickly encrusting on dead coral. The colour was light brown, the consistency soft and fragile. The ectosomal skeleton is a regular tangential reticulation of single spicules with little spongin at the nodes. The choanosomal skeleton is alike. The spicules are oxeas measuring 140-170 x 4-6.5 μm.

Adocia perforata sp. n. (Fig. 76)

Occurrence: La Parguera (Puerto Rico), mangrove, depth 0.5-1 m, 18 May 1964. R.N. LP.75.

Holotype: MSNG 47706

The specimen is now in fragments. It was massive, firm, compressible, not resilient, easy to tear. The colour was a dull violaceous drab

externally, tan-cream internally. In formalin the colour is drab, the consistency very friable. The sponge is pierced by canals up to 6 mm wide. The ectosomal skeleton is a tangential network of single spicules forming meshes about 100 μm (that is the length of a spicule) wide. The spicules are bound by little spongin at the knots. The choanosomal skeleton is a similar reticulation, only tridimensional. No main tracts are observable.

Fig. 76 - Spicules of *Adocia perforata* sp. n. Scale: 25 μm.

Spicules: Oxeas straight or slightly curved, remarkably uniform in shape and in size, measuring 100-115 x 3.5-4.5 μm. The ends are not quite sharp, often almost imperceptibly stepped down.

Niphatidae

Niphates erecta Duchassaing & Michelotti

Niphates erecta Duchassaing & Michelotti, 1864: 93

Occurrence: Port Royal (Jamaica), submerged ruins, depth 5-10 m, 27 March 1964. R.N. PR.49, PR.63.
Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.12.
Boca Chica (Dominican Republic), depth 3 m, 11 April 1964. R.N. BC.14, BC.15.
S. Domingo, La Caleta (Dominican Republic), depth 1-3 m, 3 April 1964. R.N. SDC.3.
La Parguera (Puerto Rico), depth 2 m, 3 May 1964. R.N. LP.3.
La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964. R.N. LP.28.
Port Royal (Jamaica), wharf, depth 1-6 m, 23 March 1964. R.N. PR.6, PR.11.

PR.49: fragment of ramose specimen. Solid branches about 1.5 cm thick. Softly elastic. Light greenish grey, interior light tan. Infested by zoanthid. Oxeas 210-270 x 4.5-10.5 μm, sigmas 14-18 μm, very abundant.

PR.63: fragment of cylindrical specimen, diameter 0.5-0.7 cm. Spongy. Light violet. Oxeas 210-280 x 8-11.5 μm, sigmas 13-15 μm, very rare.

KC.12: small fragment of cylindrical specimen, diameter 1.5 cm.

Tough, elastic. Violet. Infested by zoanthid. Oxeas 175-240 x 4.5-9 μm, sigmas 13-15 μm, very rare.

BC.14: fragments of subcylindrical repent specimen, diameter 1-1.5 cm. Tough, resilient. Greenish grey with tan interior. Oxeas 210-260 x 5.5-11.5 μm, sigmas 15 μm, very rare.

BC.15: fragment of cylindrical specimen, diameter 0.8 cm. Light dirty yellow. Oxeas 210-250 x 5.5-11.5 μm, sigmas 15 μm, very rare.

SDC.3: fragments of cylindrical specimen, diameter 1.5 cm. Dull green. Oxeas 220-280 x 8-12 μm, sigmas 12-16 μm, very rare.

LP.3: solid cylinder 40 cm long, 16 mm thick, tough, resilient, externally greenish grey, internally yellowish. Infested by zoanthid. Oxeas 185-210 x 4.5-9.5 μm, sigmas 16 μm, very rare.

LP.28: pieces of irregularly cylindrical, solid erect sponge, about 2.5 cm thick. Near the top it divides into three parallel, partly coalescent branches. Dull greenish grey. Observed locally to reach 1 metre in length. Oxeas 190-215 x 5-9.5 μm, sigmas 14 μm, extremely rare.

PR.6: cylindrical, solid, branching, infested by zoanthid. The living sponge was pink to light orange, internally dull orange-yellow. Oxeas 200-250 x 9-14 μm. No sigmas observed.

PR.11: cylindrical, solid, dull green in life.

In attributing these specimens to *Niphates erecta* rather than to *Gelliodes ramosa* (Carter) I am following VAN SOEST (1980: 35) who in turn adopted WIEDENMAYER's (1977: 96) synonymization of these two species. I would point out, however, that I have not observed in any of my nine specimens oxeas like those figured and described by WIEDENMAYER. In no case their points are « hastate » or « mammiform to simple-telescoped ». Furthermore, they all have a larger size. I would recall that, while the maximum length indicated by WIEDENMAYER is 175 μm, it reaches 249 μm in CARTER's *Fibularia ramosa* (1882: 283), 252-276 μm in HECHTEL's *Gelliodes areolata* (1965: 251), 242-273 μm in HECHTEL's *Gelliodes ramosa* (1969: 7). The disagreement between this series of records and WIEDENMAYER's redescribed type is conspicuous and perplexing.

Niphates digitalis (Lamarck)

Spongia digitalis Lamarck, 1814: 436

Occurrence: Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.19, KC.33.

Boca Chica (Dominican Republic), depth 20 m, 12 April 1964. R.N. BC.94.
Bimini (Bahamas), west coast, depth 10 m, 14 March 1964. R.N. BW.3.

KC.19, KC.33: funnel-shaped, 10-12 cm high, with a base 1.5 cm wide, distally 5-6 cm wide, obliquely truncate. The rim is sharp and fringed. The consistency in life was firmly resilient. The colour was dull green with purple tinge; it is light brown in formalin.

BC.94: funnel-shaped, laterally compressed, 16 cm high, base 1 x 3 cm wide, distally 9 x 2 cm wide, obliquely truncate. Rim sharp and fringed. Middle brown in the dry state.

BW.3: hollow cylinder 11 cm high, 7.5 cm in diameter. The rim of the pseudatrium is sharp and fringed; the wall is about 1 cm thick at the base of attachment. The colour in life was greenish grey.

Spicules: 1) Oxeas measuring 150-190 x 5.5-8 μm. 2) Sigmas extremely rare observed in KC.19 and in BC.94, very thin, chord 15-18 μm.

Niphates amorpha (Wiedenmayer)

Niphates digitalis amorpha Wiedenmayer, 1977: 98

Occurrence: S. Domingo, La Caleta (Dominican Republic), depth 1-3 m, 3 April 1964. R.N. SDC.2.
La Parguera (Puerto Rico), depth 2-8 m, 3-6 May 1964. R.N. LP.4, LP.37, LP.42, LP.104.
Boca de Yuma (Dominican Republic), depth 0.5-1 m, 24 April 1964. R.N. BY.2.
Bimini (Bahamas), depth 2 m, 16 March 1964. R.N. BL.3.

The specimens are from cushion-shaped to branching, repent. The consistency is moderately firm, resilient. SDC.2 and LP.104 were dull green in life, the other specimens were grey. The oscules are numerous, elevated, with raised and fringed rim, 2 to 5 mm wide. Oxeas entirely fill the robust fibres of the skeletal network. Size in μm of the oxeas:

SDC.2: 220-270 x 6-11.5	LP.42: 180-205 x 4.5-9.5
LP.4: 205-230 x 4.5-9	LP.37: 205-230 x 4.5-9.5
BY.2: 185-230 x 4.5-9	LP.104: 150-205 x 7-9

In SDC.2 a few sigmas, with a chord of 14-18 μm, have been observed.

Siphonodictyon siphonum (Laubenfels)

Siphonochalina siphona Laubenfels, 1949: 11

Occurrence: Bimini (Bahamas), lagoon, depth 0.5-1 m, 16 March 1964. R.N. BL.8.

The specimen consists of two hollow cylinders partly anastomosed, 2-3.5 cm high, 8-10 mm in diameter, wall about 1 mm thick. It was noted as protruding from sand, attached to a stone, brown, mucous. The colour in the dry state is middle brown.

Spicules: Oxeas curved asymmetrically, isodiametric, with hastate or mucronate or mammiform extremities. Some stylote and strongylote modifications are present. The size is 140-190 x 2.5-4.5 μm.

Siphonodictyon xamaycaense sp. n. (Fig. 77, 78)

Occurrence: Duncans (Jamaica), depth 40-45 m, 30 March 1964. R.N. NC.5.

Holotype: MSNG 47707

Fig. 77 - *Siphonodictyon xamaycaense* sp. n., the holotype. Scale: 2 cm.

Available are hollow cylinders which were noted as growing erect, mucous, dirty white with some reddish violet tinge. They are 8 to 11 cm high, 10-15 mm in maximum diameter, thinning to about 4 mm at the apex, which is open. The wall is about 1 mm thick. The base of

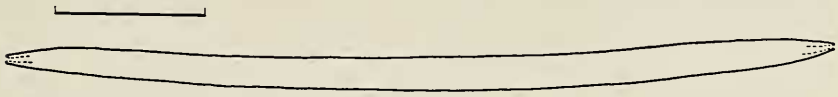


Fig. 78 - Spicules of *Siphonodictyon xamaycaense* sp. n. Scale: 25 μm.

attachment is not available. The specimen is now dry, cream-white. At the inner surface of the tubes the skeleton consists of a network of spiculo-fibres 110-380 μm thick, forming regular meshes 450-680 μm wide. Some strong elongated fibres without definite course are observable only near the base of the tubes. At the outer surface the skeleton is differentiated, consisting of a much finer reticulation based upon the main skeleton, formed by spicular tufts fanning out in all directions.

Spicules: Oxeas slightly curved, sometimes straight, of uniform size and shape. The extremities are short, regularly formed, but open, as the axial canal is apparent. They measure 110-125 x 4.5-6 μm.

Siphonodictyon brevitubulatum Pang

Siphonodictyon brevitubulatum Pang, 1973: 56

Occurrence: Duncans (Jamaica), drop-off, depth 30-40 m, 30 March 1964. R.N. NC.15, NC.17.

NC.15: a fragment, conical truncated, 5 cm at the base, 3.5 cm high, open apically in a vent 17 mm wide. The endolithic part of the sponge is not available. In life the specimen was mucous, yellow to orange-yellow; the colour in formalin is orange (C.C.193). The surface is smooth; the ectosomal skeleton is a regular network of plurispicular tracts 40-190 μm thick, forming roundish meshes 230-450 μm wide. The interior is trabecular, made by wide and flattened multispicular fascicles widely separated. The spicules are oxeas slightly curved or bent, with short points, sharp and often slightly mucronated. They measure 130-150 x 4.5-7 μm.

NC.17: a fragment (apparently the epilithic part), conical, 4 cm wide at the base, 2 cm high, open at the top in an oscule 8 mm wide.

The specimen in life was mucous, white (it was found under an overhang). Its colour in the dry state is white. The ectosomal skeleton is a regular reticulation of spicular tracts 45-65 μm thick, forming roundish meshes 160-190 μm wide. Under the ectosomal skeleton open vertical canals 2 to 4 mm in diameter separated by thin membranes. The oxeas, almost strongylote, measure 130-160 x 4-6 μm.

Gelliodes sosuae sp. n. (Fig. 79, 80)

Occurrence: Sosua (Dominican Republic), 19 April 1964. R.N. SOS.2.

Holotype; MSNG 47708

This small specimen was light violet in life, elastic. The ectosomal skeleton, not separable, is a plurispicular reticulation with meshes 180-380 μm wide. The fibres, 15-30 μm thick, are made by megascleres bound by clear spongin. Abundant sigmas are also present. The choanosomal skeleton is a dense reticulation of 10 to 35 μm-thick fibres in which spongin predominates as they are mostly cored only by one or two spicules in front. The meshes are irregular, 90-180 μm wide.

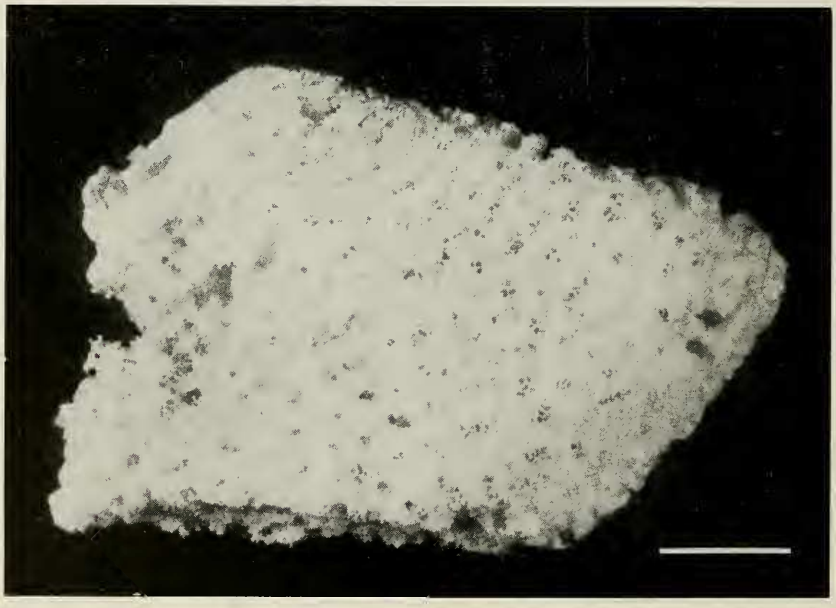


Fig. 79 - *Gelliodes sosuae* sp. n., the holotype. Scale: 0.5 cm.

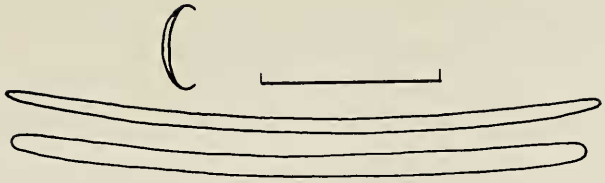


Fig. 80 - Spicules of *Gelliodes sosuae* sp. n. Scale: 50 μm.

Spicules: 1) Strongyles slightly curved, measuring 100-170 x 2.5-6 μm. The thinner, longer ones are not quite clearly strongylote. 2) Sigmas with a chord of 14-27 μm. They are uniformly C-shaped and abundant.

Amphimedon viridis Duchassaing & Michelotti

Amphimedon viridis Duchassaing & Michelotti, 1864: 81

Occurrence: Port Royal (Jamaica), submerged ruins, depth 7 m, 27 March 1964. R.N. PR.41.
Bimini (Bahamas), lagoon, depth 0.5-1 m, 16 March 1964. R.N. BL.1.
La Parguera (Puerto Rico), mangrove, depth 0.5-1 m, 3 May 1964. R.N. LP.13.

PR.41: massive, with oscule-bearing lobes. Soft, slightly mucous, dark green outside and inside in life. Soft and fragile, middle brown in formalin. Spicules: oxeas slightly curved, with sharp and well formed points, measuring 130-170 x 4.5-7 μm.

BL.1: massive with oscules on top of digitiform processes. Soft, dull green, slightly sticky in life. Fragile, medium brown in formalin. Spicules: oxeas slightly curved, measuring 100-140 x 2-2.5 μm. The axial canal is visible; the extremities are generally open, truncated.

LP.13: massive, with lobes and digitate processes bearing an apical oscule about 4 mm wide. When wet, it does not support its own weight. Green outside and inside, sticky to the touch in life. Olive in formalin. Spicules: oxeas slightly curved, measuring 130-160 x 2.5-5.5 μm. They vary considerably in thickness. The points are regular, sharp.

The frailness of the spicules of specimen BL.1 is noteworthy, particularly when we consider that to this species have been attributed also specimens with oxeas up to 10 and even 12 μm thick (Little, 1963; Wells *et al.*, 1960). I would mention that the oxeas of the two types at the Turin Museum measure respectively 120-150 x 4-4.5 μm and 130-150 x 4.5-5.5 μm.

Amphimedon compressa Duchassaing & Michelotti

Amphimedon compressa Duchassaing & Michelotti, 1864: 78

Occurrence: Boca Chica (Dominican Republic), depth 2-5 m, 11-18 April 1964. R.N. BC.5, BC.75.
Boca Chica (Dominican Republic) depth 20 m, 12 April 1964. R.N. BC.31, BC.32, BC.33, BC.89.
Boca Chica (Dominican Republic) depth 30-40 m, 15 April 1964. R.N. BC.64.
Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964. R.N. BY.23.
Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.3, KC.4, KC.5.
Nassau (Bahamas), depth 2-4 m, January 1963. R.N. 1108.
Duncans (Jamaica), drop-off, depth 35 m, 30 March 1964. R.N. NC.29.

Spicules: oxeas measuring 140-167 x 4.5-8 μm. In BY.23 they are thinner, not exceeding 5.5 μm.

The shape of KC.4 is peculiar: uniformly cylindrical, 1 cm thick, 40 cm long.

Amphimedon complanata (Duchassaing)

Spongia complanata Duchassaing, 1850: 26

Occurrence: Nassau (Bahamas), depth 3 m, February 1963. R.N. 1068.
Bimini (Bahamas), depth 2-3 m, 13 March 1964. R.N. RC.4.

Specimen 1068 was irregularly cushion-shaped, RC.4 was erect, flattened. The latter was noted to give off a red exudate when squeezed. At first sight the specimens were not distinguishable from the common *Amphimedon compressa.* Now in the dry state, they have the same reddish brown colour.

Spicules: oxeas to strongyles measuring 90-125 x 2-3 μm.

Cribrochalina vasculum (Lamarck) (Fig. 81)

Spongia vasculum Lamarck, 1814: 385

Occurrence: Boca Chica (Dominican Republic), depth 7-8 m, 12 April 1964. R.N. BC.46.
Boca Chica (Dominican Republic), depth 20 m, 27 April 1964. R.N. BC.91, BC.92, BC.93, BC.84.
Boca de Yuma (Dominican Republic), depth 15-25 m, 17 April 1964. R.N. BY.19.
Duncans (Jamaica), drop-off, depth 40-45 m, 30 March 1964. R.N. NC.11.
Off La Parguera (Puerto Rico), depth 25-35 m, 12 May 1964. R.N. SH.3.

BC.46, BC.91, BC.92: shape of a very irregular cup. Colour in life violet-brown.

BC.93: a large fragment of a laminar specimen. Hard as wood in the dry state.

BC.84: massive near the base of attachment, then flattening and giving out two thin and irregular processes. Violet-brown in life.

BY.19: fragment of an irregularly branching, repent sponge. Violet-brown in life.

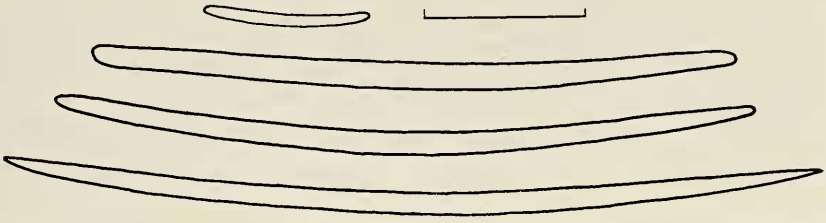


Fig. 81 - *Cribrochalina vasculum* (Lamarck). Spicules of specimen NC.11. Scale: 50 μm.

NC.11: a fragment, 10 x 5 cm wide, 6 to 8 mm thick, of a laminar sponge growing attached by a border. The colour in life was dark brownish purple, the interior tan. Now in formalin, the colour is drab, the consistency incompressible, tough, scarcely pliable.

SH.3: a small irregular lamella, 5-10 mm thick. In formalin, the specimen is tough, resilient; its colour is olive.

The ectosomal skeleton is a reticulation of spicular tracts 45-100 μm thick forming roundish meshes 140-230 μm wide. The ectosome is not separable. The choanosomal skeleton consists of strong, dense spicular tracts ascending, branching, bending toward the surface. They are 70-270 μm thick and 200 to 400 μm apart. Irregular connections are made by thinner tracts. The binding colourless spongin does not overlap the tracts.

Spicules: oxeas slightly curved, measuring 32-250 x 2-9 μm. The extremities are markedly variable. The smallest oxeas (32-80 μm long) are not abundant and might be regarded as belonging to a separate category, but intermediates are present.

In 1965 there still was available in the Duchassaing & Michelotti collection at Turin a specimen labeled *Agelas albo-lutea* D. & M. It was a laminar fragment, 5 x 8 cm wide, about 6 mm thick; it bore the register number CG.21. I have two slides obtained from this specimen: it definitely belongs to *Cribrochalina vasculum*.

Cribrochalina caribica sp. n. (Fig. 82, 83)

Occurrence: Off La Parguera (Puerto Rico), depth 25-30 m, 12 May 1964. R.N. SH.13, SH.14.
Sosua (Dominican Republic), depth 20 m, 19 April 1964. R.N. SOS.7.
Punta Salinas (Dominican Republic), on beach, 19 April 1964. R.N. SDS.17.

Holotype (SH.14): MSNG 47709

The sponge is palmate, 4 to 8 mm thick, up to about 10 cm wide. The colour appears variable, violet, greenish grey, grey. The consistency is resilient, in life and in formalin. The oscules are on one face, regularly set, 1-2 mm wide, 3-5 mm apart. The skeleton is made by irregular

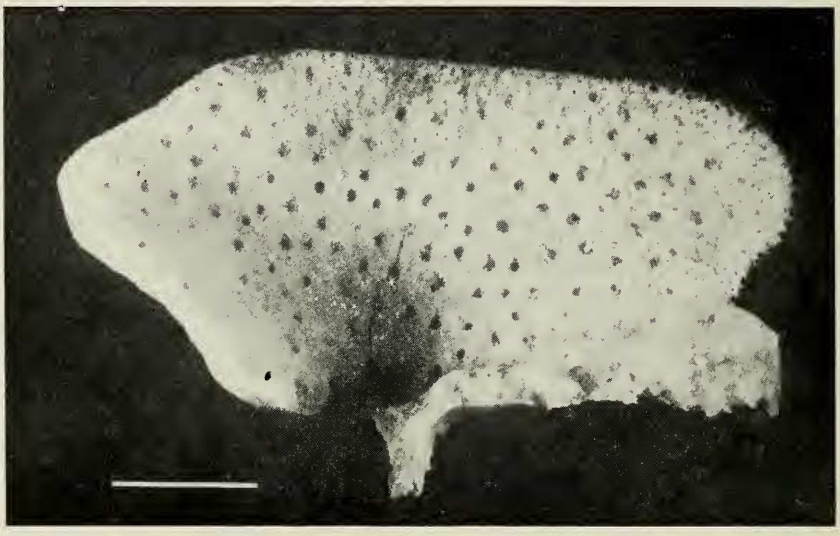


Fig. 82 - *Cribrochalina caribica* sp. n., the holotype. Scale: 2 cm.

plurispicular fibres up to 100 μm thick, branching and anastomosing. The spicules are not always ordinately arranged within the fibres. At the surface the reticulation becomes more regular, with meshes 150-400 μm wide, and with perpendicular brushes arising from the nodes. The spicules are oxeas slightly curved, measuring 150-205 x 6.5-10.5 μm. The points are short and sharp.

Fig. 83 - Spicules of *Cribrochalina caribica* sp. n. Scale: 50 μm.

The specimen ZMA POR.4439, recorded by VAN SOEST (1980: 44) as *Cribrochalina spiculosa* appears to belong to the present species.

CALLYSPONGIIDAE

Callyspongia plicifera (Lamarck)

Spongia plicifera Lamarck, 1813: 435

Occurrence: La Parguera (Puerto Rico), 9 May 1964. R.N. LP.67.
Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.35.

KC.35: the specimen is vase-shaped, 17 cm high, 4 cm wide at the base, 9 cm wide below the pseudoscule which has a diameter of 7.5 cm. The wall is about 6 mm thick, the rim of the pseudoscule is paper thin, laciniate. The outer surface is densely beset with irregular blunt tubercles. The colour in life was purple to lavender, not uniform, iridescent. The consistency was softy resilient. Primary and secondary reticulations of the ectosomal skeleton are not everywhere clearly distinguishable. The primary fibres are up to 80 μm thick, but many of the secondary ones almost reach this thickness. The resulting meshes are mostly rounded, 90 to 180 μm wide. The embedded spicules are strongyles measuring 70-90 μm by about 1.5 μm, sparse and rare.

LP.67: available is only a fragment of the wall of an apparently vase-shaped sponge. The convex side is deeply grooved. The ectosomal skeleton consists of a network of main fibres 40-100 μm thick forming meshes 350-700 μm wide. Within them there is a secondary reticulation of fibres 10-40 μm thick forming meshes 140-260 μm wide. The reticulation of the choanosomal skeleton is irregular, with main fibres up to 120 μm thick and connecting ones down to 8 μm. The fibres are devoid of spicules; only rare traces are observable.

Callyspongia tenerrima Duchassaing & Michelotti

Callyspongia tenerrima Duchassaing & Michelotti, 1864: 57

Occurrence: Nassau (Bahamas), depth 2-4 m, 24 January 1963. R.N. 1089.

The specimen is cylindrical, 23 cm high, 2 cm thick, tough and resilient. The colour in life was olive (C.C.315), it is dark brown in formalin. The oscules, numerous, are 2 to 4 mm wide. The ectosomal skeleton is irregular, with main fibres 30 to 60 μm thick which not always form polygonal meshes as they converge toward the conules. A secondary reticulation is formed by fibres 10-20 μm thick, with meshes 50-140 μm wide. The main choanosomal fibres are up to 100 μm thick and are often fasciculated. The coring spicules, strongyles measuring 60-75 x 1.5-2 μm, are scarce.

Callyspongia armigera (Duchassaing & Michelotti)

Tuba armigera Duchassaing & Michelotti, 1864: 48

Occurrence: Staniel Cay, Exumas (Bahamas), cave, depth 1-5 m, 3 March 1963. R.N. 1125.

Fragments of a subcylindrical, ramose sponge. Firmly resilient, brown in formalin. Surface irregular, oscules numerous, 3-4 mm wide. Infested by a zoanthid. The primary ectosomal reticulation is made by fibres 19-47 μm thick forming meshes 380-550 μm wide. The secondary network is formed by fibres 9-18 μm thick forming meshes 50-90 μm wide. This compound reticulation is beautifully regular. The larger fibres contain a variable but moderate amount of spicules; these in the secondary reticulation are only sparsely present. The spicules are oxeas measuring 70-80 x 1.5-4 μm.

Callyspongia fallax Duchassaing & Michelotti

Callyspongia fallax Duchassaing & Michelotti, 1864: 57

Occurrence: Port Royal (Jamaica), cays, depth 10 m, 22 March 1964. R.N. KC.22.

Small, repent, tawny in life. Oscules 4-10 mm wide on rounded lobes. Ectosomal skeleton made by a primary reticulation of spongin fibres 50-80 μm thick forming meshes 190-300 μm wide. In the main fibres the embedded spicules are 1 to 8 in front, in the secondary fibres they are 1 to 3. The spicules are oxeas-strongyles isodiametric, slightly curved, measuring 80-95 μm by about 1.5 μm.

Callyspongia simplex (Duchassaing & Michelotti)

Tuba lineata var. *simplex* Duchassaing & Michelotti, 1864: 47

Occurrence: Boca Chica (Dominican Republic), depth 5 m, 11 April 1964. R.N. BC.3.

The specimen consists of two irregular parallel lamellae joined at a few points. The lamellae are about 5 mm thick. The colour in life was red to salmon-pink. The consistency, in formalin, is softly elastic, the colour middle brown. The ectosomal skeleton consists of a main reticulation of multispicular fibres in which the spicules are irregularly arranged and, as a rule, exceed the quantity of spongin. They are 14-35 μm thick and form irregular meshes 190-380 μm wide. Within this network there is a secondary one, irregular, with meshes about 100 μm wide, whose side consists of a single spicule enveloped by scarce spongin. The main fibres of the choanosomal skeleton are up to 46 μm thick. The spicules they contain are mostly sparse, but can be found concentrated here and there. Secondary fibres, not always clearly distinguishable from the principal ones, are 9-30 μm thick and contain a single spicule, not continuously. The meshes of the network are irregular, 60-180 μm wide. Strong fascicles of fibres run longitudinally. The spicules are oxeas slightly curved, measuring 75-100 μm, 2.5-5 μm thick. Their extremities are sharp, generally stepped down.

The peculiar form of this specimen agrees closely with Duchassaing & Michelotti's description. This species is further characterized by the main fibres of the ectosomal skeleton being plurispicular and also, perhaps, by its colour.

Callyspongia vaginalis (Lamarck)

Spongia vaginalis Lamark, 1814: 436

Occurrence: Bimini, Rabbit Cay (Bahamas), depth 2-3 m, 13 March 1964. R.N. RC.2.
Bimini (Bahamas), west coast, depth 10 m, 16 March 1964. R.N. BW.11.
Boca Chica (Dominican Republic), depth 20 m, 12 April 1964. R.N. BC.38.
Boca Chica (Dominican Republic), depth 7-8 m, 12 April 1964. R.N. BC.53.
La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964. R.N. LP.41.

RC.2 (dry): a group of coalescent erect tubes, thin walled, with wide apical vents. The surface is beset with dull conules and is infested by a zoanthid. The colour in life was grey.

BW.11 (formalin): two coalescent erect tubes from a narrow base, 12 cm high. Their maximum diameter (in the middle) is 3 cm, the apical

vents are 1.5 cm wide. The wall of the tubes is thick; the surface is beset with dull conules closely set. The colour in life was noted as dull greyish green to bluish to drab.

BC.38: fragment of tubular, branching specimen, aculeated, infested by a zoanthid. Grey in life, middle brown in formalin.

BC.53: fragment from specimen consisting of several tubes having a common base. Aculeated, infested by zoanthid. Violet in life, middle brown in formalin.

LP.41: one of a group of tubular specimens, 20 cm high, with a maximum diameter of 35 mm below the pseudoscule which is 25 mm wide. The rim is laciniated, paper thin. The surface is beset with short sparse conules. The colour in life was a dull light greyish violet, maintained in formalin.

The ectosomal skeleton consists of a network of spiculofibres 18-37 μm thick, forming meshes 140-280 μm wide. Within these meshes there is a secondary reticulation of fibres 4-9 μm thick, forming meshes 45-120 μm wide. All the fibres are only discontinuously cored by spicules. The choanosomal skeleton is a dense reticulation, with fibres up to 70 μm thick, also fasciculated. They are only sparsely cored by spicules. These are oxeas very slightly curved, sometimes straight, with short and sharp extremities. They measure 70-110 x 2-5.5 μm.

Toxochalina multiformis sp. n. (Fig. 84, 85)

Occurrence: La Parguera (Puerto Rico), depth 1.5 m, 9 May 1964. R.N. LP.60.
La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964. R.N. LP.43.
S. Domingo, La Caleta (Dominican Republic), depth 1-3 m, 3 April 1964. R.N. SDC.4.
Boca Chica (Dominican Republic), depth 3 m, 11 April 1964. R.N. BC.9.

Holotype (LP.43): MSNG 47710

LP.43: the specimen consists of three tubular elements cut from a common base, measuring respectively 7, 10 and 11 cm, with a maximum diameter of 1.5, 2.5 and 3 cm. The wall is 3 to 5 mm thick. The tubes are rather irregular, with outgrowths and constrictions, terminating apically with an annular asymmetric swelling. The colour in life was greyish, it is now (in spirit) middle brown. The surface is smooth, the consistency is resilient. The choanosomal skeleton is a rather regular reticulation of spongin fibres 37-65 μm thick forming meshes 220-370 μm wide. This network becomes denser toward the periphery: at

the surface the meshes are reduced to 90-280 μm. The structure of the ectosomal skeleton is not uniform: in some areas it is possible to distinguish main fibres about 45 μm thick forming meshes devoid of regularity, about 200-450 μm wide, and within them a secondary reticulation of fibres 10-20 μm thick forming meshes 70-140 μm wide. All the fibres are cored, not uniformly, by oxeas.

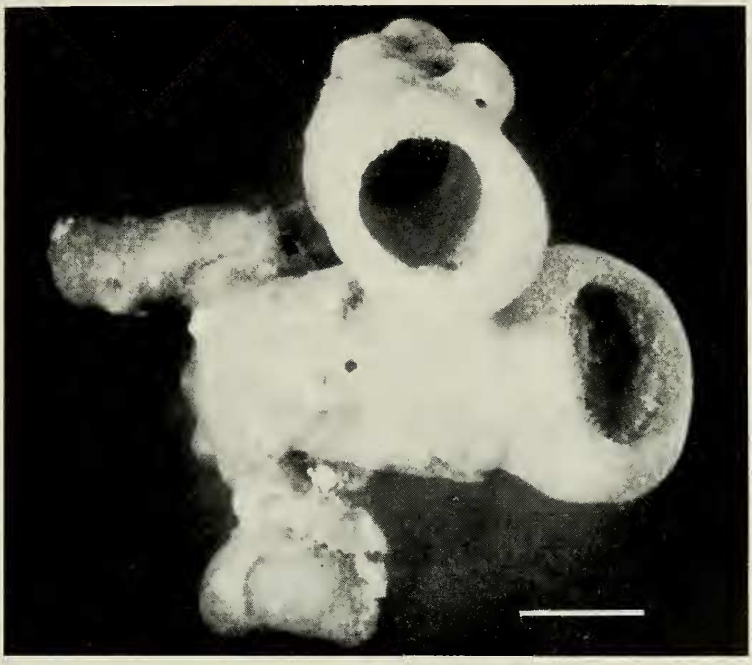


Fig. 84 - *Toxochalina multiformis* sp. n., the holotype. Scale: 3 cm.

SDC.4: the specimen is cushion-shaped, with prominent lobes apically open. It measures 8 x 4 x 1.5 cm, and the vents are 3 to 8 mm wide. The colour in life was violet and is now (in the dry state) light brown. The consistency is firm, scarcely elastic. The choanosomal skeleton is a reticulation of spongin fibres 18-47 μm thick forming irregular meshes 100-380 μm wide. This network becomes denser toward the surface, where the meshes measure 35-150 μm, made by fibres 9-90 μm thick, which are also present in the form of perforated bands. All the fibres are cored by oxeas, but sparsely.

BC.9: this specimen has the same form as SDC.4; it is only smaller.

LP.60: two coalescent uneven tubes 5 cm high, about 1.5 cm in diameter. The colour in life was blue, it is now (in the dry state) middle brown. The ectosomal skeleton is made by spongin fibres 9-47 μm thick, forming meshes 70-180 μm wide. They are sparsely cored by oxeas. The fibres of the choanosomal skeleton, also cored by scarce spicules, are 30 to 70 μm thick and form meshes 200-500 μm wide.

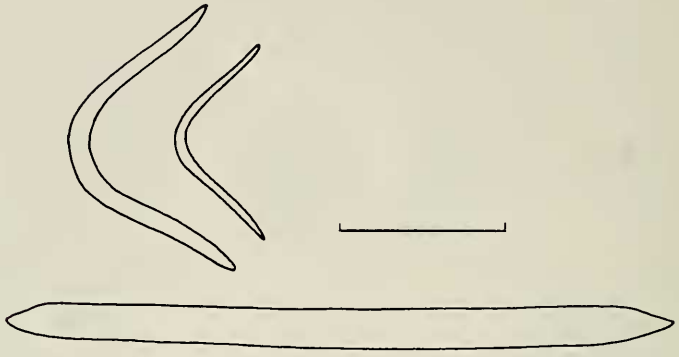


Fig. 85 - Spicules of *Toxochalina multiformis* sp. n. Scale: 20 μm.

Spicules: 1) Oxeas straight or slightly curved, isodiametric, with short, hastate points, measuring 65-95 x 2.5-7 μm. 2) Toxas with a chord of 18-43 μm.

In spite of the difference in growth-form, there can be little doubt that these specimens are conspecific, as their spiculation is identical.

DICTYOCERATIDA

Spongiidae

Spongia pertusa (Hyatt)

Spongia officinalis tubulifera pertusa Hyatt, 1877: 512

Occurrence: La Parguera (Puerto Rico), mangrove, depth 0.5-1.5 m, 3-18 May 1964. R.N. LP.15, LP.87.

Locally common. Massive, irregular, in life black outside, drab inside. Upper surface beset with variously formed oscular processes. Main fibres not clearly distinguishable, occasionally with inclusions,

very pale yellow. The consistency of the sponge in spirit and in formalin is softly resilient.

Hippospongia lachne Laubenfels

Hippiospongia lachne Laubenfels, 1936: 11

Occurrence: Bimini (Bahamas), lagoon, depth 0.5-1.5 m, 16 March 1964. R.N. BL.9.
Bimini, Rabbit Cay (Bahamas), depth 2-3 m, 13 March 1964. R.N. RC.1.

Available are fragments of large specimens which were described in field notes as black or brownish black externally and cream internally, firmly resilient, uncommon. In formalin the sponge is softly resilient, dark brown externally and tan internally. The surface is grooved, minutely and densely hispid; the interior is cavernous. The fibres are very pale yellow, uncored, not distinguishable in primary and secondary, 18-30 μm thick. They form irregular meshes, 40-200 μm wide.

Hyattella intestinalis (Lamarck)

Spongia intestinalis Lamarck, 1814: 439

Occurrence: Bimini (Bahamas), lagoon, depth 0.5-1 m, 16 March 1964. R.N. BL.23.

The specimen is massive, irregular, perforated by wide canals. On one side three processes arise, 4, 3 and 1 cm high, about 1 cm thick, widening toward the tip. The primary fibres are made by sand grains rather irregularly bound by pale-yellow spongin, forming an often fasciculated fibre up to 300 μm thick. Appearing white, about 1 mm apart, these fibres are conspicuous also to the unaided eye. At the tip of the processes they often branch. The secondary fibres are 25-45 μm thick and form meshes 150-450 μm wide. The sponge was blackish in life, it is middle brown in spirit. The consistency is toughly resilient.

Thorectidae

Hyrtios violaceus (Duchassaing & Michelotti)

Acamas violacea Duchassaing & Michelotti, 1864: 95

Occurrence: Bimini (Bahamas), lagoon, depth 0.5-1 m, 16 March 1964. R.N. BL.14.

The specimen in formalin is an amorphous mass extremely soft and fragile. The sponge in life was brownish black, soft, delicate. It

gave off a red exudate after collection. The main fibres consist of coarsely cemented debris (mostly sand) and are 150-300 μm thick. Connecting fibres are 40-80 μm thick; they are generally only partially cored: the spongin prevails.

Hyrtios proteus Duchassaing & Michelotti

Hyrtios proteus Duchassaing & Michelotti, 1864: 74

Occurrence: Bimini (Bahamas), lagoon, depth 0.5-1 m, 16 March 1964. R.N. BL.26.

Massive, lobate, softly resilient, black in life, very regularly conulose. The main fibres protrude from the conules which are about 1 mm high and 2-3 mm apart. In spirit the sponge is dark brown, almost black outside, light brown inside. Main and secondary fibres, up to about 300 μm thick, are cored by foreign material. The spongin, where visible, is distinctly laminated, light yellow.

Ircinia strobilina (Lamarck)

Spongia strobilina Lamarck, 1816: 383

Occurrence: Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.23.

The specimen is conical, 6 cm high with a base 6 cm wide. There is a group of four oscules 4 mm wide. The conules are about 6 mm high, 5 to 9 mm apart, often bifid. In life the colour of the sponge was dirty grey externally, mustard internally. In formalin the colour is dirty grey outside, rust inside. The preserved specimen is flaccid, although difficult to cut and tear. The filaments are 5-7 μm thick, with knobs 10 μm in diameter.

Smenospongia aurea (Hyatt)

Aplysina aurea Hyatt, 1875: 404

Occurrence: La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964. R.N. LP.32.
Boca Chica (Dominican Republic), depth 20 m, 27 April 1964. R.N. BC.85.
Bimini, Rabbit Cay (Bahamas), depth 5-7 m, 13 March 1964. R.N. RC.25.
Nassau (Bahamas), depth 1-4 m, 25 February 1963. R.N. 1094.

LP.32: from a base 11 x 7 cm wide two cone-shaped processes arise, 6 and 7 cm high, with apical oscule respectively 7 and 8 mm wide.

The colour in life was brown externally, yellow internally; in spirit it is dark brown. The consistency is firm, scarcely compressible. The laminated, uncored, fasciculated, trellised fibres, 50-180 μm thick, form toward the surface a structure markedly honeycombed.

Smenospongia conulosa sp. n. (Fig. 86)

Occurrence: Off La Parguera (Puerto Rico), depth 25-35 m, 12 May 1964. R.N. SH.22.

Boca Chica (Dominican Republic), depth 20 m, 11 April 1964. R.N. BC.17.

Holotype (SH.22): MSNG 47711

Paratype (BC.17): MSNG 47712

SH.22: the specimen, not entire, apparently the upper part of an individual, is conical, 10 cm high, 8 cm wide at the base. At the summit there is a round vent 2 cm wide. The surface is conulose, the strong conules being 3-5 mm high, 5-10 mm apart. In life the sponge was blackish outside, grey to cream inside, mucous, sticky. Its colour in formalin is dark brown, the consistency firmly resilient.

BC.17: part of a cushion-shaped sponge 1 to 2 cm thick, bearing numerous multiple oscules. Its colour in life was olive-brown outside,

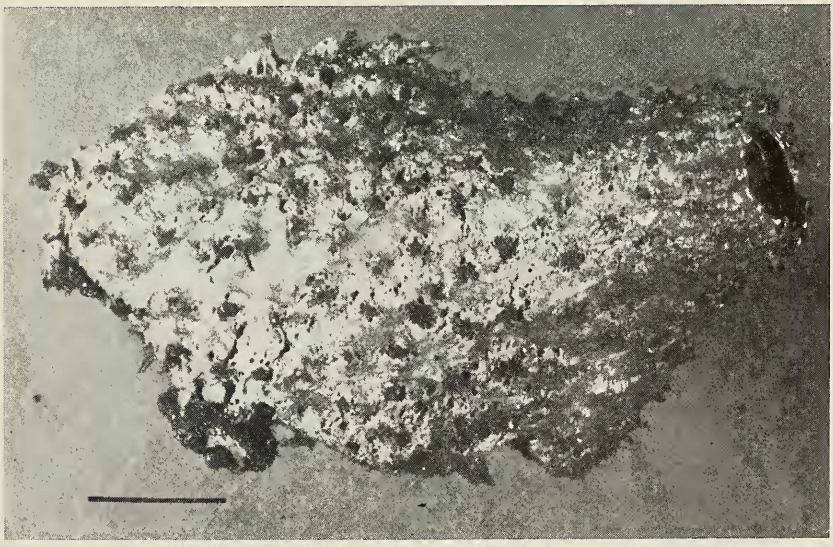


Fig. 86 - *Smenospongia conulosa* sp. n., the holotype. Scale: 2 cm.

drab inside. It is dark brown in the dry state. The sponge was noted as very mucous.

The skeleton consists of a regular reticulation of spongin fibres which are not distinguishable as primary and secondary, 20 to 70 μm thick. They are uncored, laminated; no pith is evident. The meshes are 180-390 μm wide. The colour of the fibres is orange (about C.C.248).

Dysideidae

Dysidea etheria Laubenfels

Dysidea etheria Laubenfels, 1936: 28

Occurrence: La Parguera (Puerto Rico), mangrove, depth 0.5-1 m, 18 May 1964. R.N. LP.73.
Bimini (Bahamas), lagoon, depth 0.5-1 m, 16 March 1964. R.N. BL.6.

The specimens were sky-blue in life. Their consistency in formalin and in the dry state is very soft and fragile, the colour middle brown.

Dysidea janiae (Duchassaing & Michelotti)

Terpios janiae Duchassaing & Michelotti, 1864: 101

Occurrence: La Parguera (Puerto Rico), depth 5-8 m, 9 May 1964. R.N. LP.98.

Irregular cylinders with apical opening, partly coalescing, growing from a common base encrusting on dead coral. In life the colour was dull green with some violet tinge, the consistency moderately firm but fragile. In spirit the colour is whitish. The alga of the genus *Jania* densely permeates the choanosome.

DENDROCERATIDA

Aplysillidae

Pleraplysilla stocki Soest

Pleraplysilla stocki Soest, 1978: 75

Occurrence: La Parguera (Puerto Rico), mangrove, depth 0.5-1 m, 18 May 1964. R.N. LP.70.

The specimen is irregularly massive, measuring 7 x 5 x 4 cm. It was black in life; it has now, in spirit, various shades of brown. The

surface is conulose, the fibres protruding conspicuously from the conules. The consistency is flaccid, easy to tear. The dendritic fibres are irregular, 40-120 μm in diameter, abundantly cored by foreign material. They branch and anastomose rather frequently, even forming here and there a few meshes. At their distal end, protruding from the surface, they may bifurcate, the two branches being connected by transversal fibres. The colour of the fibres is indicated by VAN SOEST as dark purple; it is pale yellow in my specimens, the same colour which is observed in the fibres of *Pleraplysilla minchini* and *P. spinifera*.

DICTYODENDRILLIDAE

Igernella notabilis (Duchassaing & Michelotti) (Fig. 87)

Euryades notabilis Duchassaing & Michelotti, 1864: 106

Occurrence: Duncans (Jamaica), drop-off, depth 40-45 m, 30 March 1964. R.N. NC.1.
La Parguera (Puerto Rico), depth 5 m, 9 May 1964. R.N. LP.96.
Off La Parguera (Puerto Rico), depth 35 m, 12 May 1964. R.N. SH.7.

Each specimen consists of several hollow cylinders about 4 cm high, 1-2 cm in diameter, partly coalescing. The colour in life was cherry-

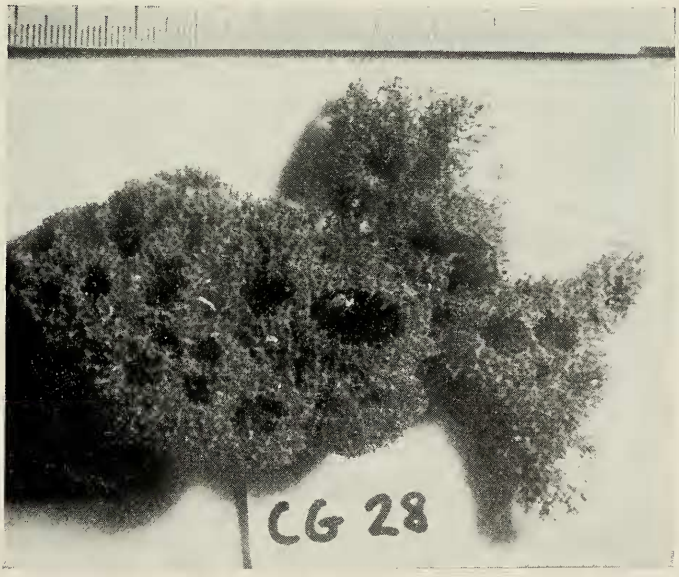


Fig. 87 - The paralectotype of *Euryades notabilis* D. & M. at the Turin Museum.

red, it is light orange-brown to pale orange-yellow in spirit. The fibres are pale yellow, the main ones mostly 90 μm thick, moderately cored by sand grains. The secondary fibres, 45-60 μm thick, contain only occasional grains. The rays of the horny triactines measure 950 to 1350 μm.

VERONGIDA

Aplysinidae

Aplysina cauliformis (Carter)

Luffaria cauliformis Carter, 1882: 268

Occurrence: Nassau, Atholl Island (Bahamas), depth 1-4 m, 21 February 1963. R.N. 1097, 1099, 1100, 1127, 1128.

1097: cylindrical with some flattenings, about 9 mm thick. Colour in life violaceous azure, yellowish internally, brown in formalin.

1100: a cluster of cylindrical branches 3 to 7 mm thick, up to about 15 cm long, frequently anastomosing, starting from a common flattened base. Colour in life dull yellow, interior a lighter yellow; out of water it became partly green; brown in formalin.

1099: cylindrical, 9 to 14 mm in diameter, with one short branch. Colour in life light greenish with shades of yellow and violet, interior and tips yellowish, blue-green one hour after collection, dark brown in formalin.

1127: cylindrical, ramose, about 10 mm thick near the base, with some branching and anastomosing, tapering to thin extremities. Colour in life azure, dark brown in the dry state.

1128: fragment of uniformly cylindrical, about 15 mm thick, 50 cm long sponge, devoid of branches. The colour in formalin is dark brown; the interior colour in life was yellow.

The surface of the specimens is finely conulose, harsh to the touch. The oscules are sparse, mostly 4 mm wide. The consistency is rather stiff. The amber-yellow fibres are 100-150 μm in diameter; the pith is irregular, not exceeding 50% of the fibre.

Aplysina lacunosa (Lamarck)

Spongia lacunosa Lamarck, 1814: 434

Occurrence: Port Royal (Jamaica), submerged ruins, depth 5-10 m, 27 March 1964. R.N. PR.48.

Bimini (Bahamas), west coast, depth 10 m, 16 March 1964. R.N. BW.13.
Duncans (Jamaica), drop-off, depth 35 m, 30 March 1964. R.N. NC.41.
Off La Parguera (Puerto Rico), depth 30-35 m, 12 May 1964. R.N. SH.24.
Port Royal (Jamaica), cays, depth 10-25 m, 22 March 1964. R.N. KC.11.

PR.48: one of several clustered clavate tubes, 10 cm high, 4 cm wide with narrow base of attachment, apical vent 17 mm wide, irregularly grooved and indented. Colour in life greenish yellow with some reddish areas, interior yellow; dark brown in formalin. Consistency (in formalin) rather softly resilient.

NC.41: fragment of a tubular sponge 6 cm in diameter, with apical vent 15 mm wide, deeply and irregularly pitted. Colour in life purplish yellow not uniform; light brown in formalin. Consistency in life and preserved stiff, incompressible.

SH.24: fragment of tubular sponge 4 cm in diameter, with apical vent 2 cm wide, surface with irregular, shallow depressions. Colour in life azure to lilac to red, not uniform, bright; the colour in formalin is a dull greyish beige. The consistency (in formalin) is firmly resilient.

KC.11: a tubular sponge 11 cm high, 5.5 cm in diameter tapering to a very restricted base, with an apical vent 22 mm wide. There is a lateral outgrowth 2 cm high and as much thick. The surface is beset with protuberances and depressions. The colour in life was greenish yellow, oxidizing to dark reddish brown after collection; it is dark brown in spirit. The consistency is rather softly resilient.

BW.13: the upper part of one of several tubular sponges growing together, 5 cm thick, with an apical vent closed by a diaphragm, 15 mm wide. Numerous thin, flexible processes rise from the upper part of the sponge. They are about 15 mm long, 2 mm thick, with a very narrow base of attachment. Colour in life greenish yellow, dark brown in formalin. Consistency softly resilient.

The yellow fibres are up to 150 μm thick; the pith has an irregular thickness, not exceeding 50% of the fibre.

Aplysina archeri (Higgin)

Luffaria archeri Higgin, 1875: 223

Occurrence: Duncans (Jamaica), drop-off, depth 35 m, 30 March 1964. R.N. NC.27.

A small fragment (from the apical vent) of a very large tubular specimen, with an apical vent 7 cm wide. The wall of the tube just

below the vent is 1 cm thick. The surface is even, finely conulose; the interior of the tube is slightly annulated. The consistency was tough, rubbery; the colour was from brownish red to dirty yellow, interior dirty yellow. In formalin the colour is a light reddish brown. The amber-coloured laminated fibres are about 110 μm thick, the pith occupying less than 50% of them.

Aplysina insularis (Duchassaing & Michelotti)

Luffaria insularis Duchassaing & Michelotti, 1864: 61

Occurrence: Nassau, Atholl Island (Bahamas), depth 1-4 m, 25 February 1963. R.N. 1123, 1109, 1098.
Bimini (Bahamas), west coast, depth 2-3 m, 13 March 1964. R.N. RC.11.

1123: the specimen is tubular with lateral longitudinal outgrowths like buttresses, 11 cm high, 7 cm in diameter. The apical vent is 2 cm wide. Here and there grow thin clavate processes, about 1 cm long and 1-1.5 mm thick. The colour in life was greenish yellow, the interior yellowish; it is reddish black in formalin. The surface is finely conulose; the consistency is firmly resilient. The amber-coloured laminated fibres are about 130 μm thick, with an irregular pith occupying less than 50% of the fibre.

1109: two tubes starting from a common narrow base, laterally coalescing. The tubes are 11-12 cm high, 3 cm in diameter, and have an apical vent, partly closed by a diaphragm, 5 mm wide. The surface is conulose, the consistency firmly resilient. The colour in life was brownish to greenish yellow, interior yellow; it is violaceous black in formalin. The amber-coloured laminated fibres are about 200 μm thick, with a pith occupying less than 50% of the fibre.

1098: claviform, 9 x 4.5 cm, with apical oscule 1.5 cm wide. Flexible claviform processes, about 2 cm long and 3 mm thick, rise from the border of the oscule. Colour in life yellow to greenish yellow, green soon after collection, dark brown in spirit. Softly resilient. Fibres about 120 μm thick, pith less than 50%.

RC.11: a small specimen, massive, irregular, with many thin appendages about 5 mm long. Colour in life yellow, dark brown in formalin. Very finely conulose. Firmly resilient. Fibre about 100 μm thick, pith little less than 50%.

Aplysina fulva (Pallas)

Spongia fulva Pallas, 1766: 383

Occurrence: La Parguera (Puerto Rico), depth 5-17 m, 6 May 1964. R.N. LP.48.

The specimen consists of five digitations 7 cm long and about 12 mm thick starting from a common narrow base and coalescing in part. The surface is conulose, the consistency (in spirit) is softly resilient, the colour dark brown. The fibres have a not uniform thickness of 50-110 μm, more than 50% of it occupied by the pith. Near the base the fibres are prevalently longitudinally arranged, close-set, forming scarce, elongated meshes, and are up to 220 μm thick.

Verongula gigantea (Hyatt)

Aplysina gigantea Hyatt, 1875: 405

Occurrence: Bimini (Bahamas), west coast, depth 2-3 m, 19 March 1964; R.N. RC.16.
Nassau, Atholl Island (Bahamas), depth 1-4 m, 25 February 1963. R.N. 1129.
Boca Chica (Dominican Republic), depth 2-3 m, 11 April 1964. R.N. BC.26.

RC.16: fragment from the upper margin of a hollow cylindrical specimen 50 cm high and 30 cm wide. The colour was green with orange tinges, not uniform, the interior yellow. A blue exudate was given off in formalin.

1129: the specimen (entire) is regularly cup-shaped, with a narrow base, 8 cm high, 10 cm wide. Larger specimens were observed locally. The colour was brown outside and greenish inside the cup; the choanosome was yellow.

BC.26: fragment from the border of a wide cup. It gave off a blackish exudate when placed in formalin.

The aspect of the surface of the three specimens is identical, characterized by meandering ridges. The preserved specimens are firm but easy to tear; their colour is a very dark brown. The skeleton is organized in lamellar two-dimensional reticulations of fibres about 4 mm apart. The fibres are normally 190-225 μm thick, yellow in specimen BC.26, orange in the other two, with a pith occupying a little more than 50% of the fibre.

Aplysinellidae

Pseudoceratina crassa (Hyatt)

Dendrospongia crassa Hyatt, 1875: 401

Occurrence: Nassau, Atholl Island (Bahamas), depth 1-4 m, 25 February 1963. R.N. 1105, 1110, 1111.

Bimini (Bahamas), west coast, depth 10 m, 16 March 1964. R.N. BW.8.

Duncans (Jamaica), drop-off, depth 35-45 m, 30 March 1964. R.N. NC.13, NC. 40, NC.44, NC.45.

Port Royal (Jamaica), wharf pilings, depth 1-6 m, 23 March 1964. R.N. PR.13.

Boca de Yuma (Dominican Republic), depth 15-25 m, 24 April 1964. R.N. BY.29, BY.31.

Boca Chica (Dominican Republic), depth 2-3 m, 11 April 1964. R.N. BC.27.

La Parguera (Puerto Rico), depth 5-8 m, 9 May 1964. R.N. LP.107.

The surface is conulose to tuberculate. The consistency is firm, resilient. Specimens preserved in formalin have an identical colour: a very dark violet-brown. The skeleton is made by rather irregular dendritic fibres sparse, often a few millimetres apart, anastomosing here and there. These fibres often reach a thickness of 500 μm; there are some 1 mm thick in specimen 1111. In general the pith occupies more than half of the fibre.

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INDEX

A LIST OF THE DEMOSPONGIAE HITHERTO RECORDED FROM THE WEST INDIES

In this paper the term « West Indies » is understood as comprising also Bermuda, the Gulf of Mexico and the continental coast of the Caribbean Sea.

It is hardly necessary to mention that the list that follows is not the result of a general revision: it undoubtedly contains a considerable number of items needing reinvestigation.

Bibliographical indications in square brackets are meant to provide some further rilevant information.

Plakinidae

Corticium tetralophum Hechtel 1965: 77
Corticium versatile Schmidt 1880: 69 [Topsent 1923: 13]
Dercitopsis onkodes (Uliczka 1929: 60)
Plakina dilopha Schulze 1880: 422 [Topsent 1937: 7]
Plakina monolopha Schulze 1880: 407 [Arndt 1927: 136]
Plakortis simplex Schulze 1880: 430 [Desqueyroux-Faundez 1981: 726]

Stellettidae

Ancorina demera (Laubenfels 1934: 4) [Bergquist 1965: 193]
Ancorina individua Schmidt 1870: 67
Cryptosyringa membranophila Vacelet 1979: 33
Kapnesolenia fisheri Laubenfels 1934: 6
Pachastrissa hartmeyeri Uliczka 1929: 50
Pachataxa lithistina (Schmidt 1880: 68) [Lévi & Lévi 1983: 151]
Pachataxa lutea Pulitzer-Finali: present paper
Penares mastoidea (Schmidt 1880: 70) [Topsent 1923: 9]
Stelletta anancora (Sollas 1886: 189) [Burton 1954: 220]
Stelletta debilis Thiele 1900: 25
Stelletta debilis stenospiculata Uliczka 1929: 49
Stelletta fenimorea (Laubenfels 1934: 3)
Stelletta fibrosa (Schmidt 1870: 67) [Pulitzer-Finali: present paper]
Stelletta grubii Schmidt 1862: 46 [Little 1963: 58]
Stelletta incrustata Uliczka 1929: 47
Stelletta kallitetilla (Laubenfels 1936: 169) [Wiedenmayer 1977: 177]
Stelletta pudica (Wiedenmayer 1977: 172) [Pulitzer-Finali: present paper]
Stelletta pygmeorum Schmidt 1880: 70
Stelletta variabilis (Wilson 1902: 384)

Stelletta variastra Pulitzer-Finali: present paper
Stellettinopsis dominicana Pulitzer-Finali: present paper
Stryphnus pachastrelloides (Schmidt 1870: 68) [Burton 1954: 220]
Tribrachion schmidti Weltner 1882: 50 [Sollas 1888: 154]

Geodiidae

Caminus sphaeroconia Sollas 1886: 196 [Uliczka 1929: 52]
Erylus alleni Laubenfels 1934: 7
Erylus bahamensis Pulitzer-Finali: present paper
Erylus clavatus Pulitzer-Finali: present paper
Erylus discophorus (Schmidt 1862: 47)
Erylus euastrum (Schmidt 1868: 20)
Erylus formosus Sollas 1886: 195 [Wiedenmayer 1977: 181]
Erylus goffrilleri Wiedenmayer 1977: 182
Erylus ministrongylus Hechtel 1965: 72
Erylus trisphaera (Laubenfels 1953: 546)
Geodia cariboea Duchassaing & Michelotti 1864: 105
Geodia cumulus Schmidt 1870: 71 [Burton 1946: 858]
Geodia exigua Thiele 1898: 11 [Uliczka 1929: 58]
Geodia flexisclera Pulitzer-Finali: present paper
Geodia gibberosa Lamarck 1815: 334 [Wiedenmayer 1977: 178]
Geodia media leptoraphes Uliczka 1929: 56
Geodia neptuni (Sollas 1886: 198) [Wiedenmayer 1977: 179]
Geodia papyracea Hechtel 1965: 71
Geodia spherastrea Lévi 1964: 68
Geodia thomsoni Schmidt 1870: 70
Geodia tuberculosa Bowerbank 1872: 626 [Sollas 1888: 251]
Geodia tumulosa Bowerbank 1872: 628
Isops pachydermata Sollas 1886: 198
Pachymatisma apiarium (Schmidt 1870: 71)
Sidonops stromatodes Uliczka 1929: 54

Pachastrellidae

Characella pachastrelloides (Carter 1876: 403)
Pachastrella agassizi (Sollas 1888: 101)
Pachastrella dilifera Laubenfels 1934: 1
Pachastrella monilifera Schmidt 1868: 15

Theneidae

Neothenea enae Laubenfels 1934: 5
Sphinctrella horrida Schmidt 1870: 65
Thenea fenestrata (Schmidt 1880: 71) [Lévi 1964: 66]
Thenea muricata (Bowerbank 1858: 308)

Tetillidae

Acanthotetilla gorgonosclera Soest 1977: 7
Cinachyra alloclada Uliczka 1929: 41 [Soest & Sass 1981: 338]

Cinachyra apion Uliczka 1929: 43 [Soest & Sass 1981: 338]
Cinachyra cavernosa Lamarck 1815: 70 [Soest & Sass 1981: 338]
Cinachyra kuekenthali Uliczka 1929: 44 [Soest & Sass 1981: 338]
Cinachyra rhizophyta Uliczka 1929: 38 [Soest & Sass 1981: 338]
Cinachyra schistospiculosa Uliczka 1929: 45 [Soest & Sass 1981: 338]
Cinachyra subterranea Soest & Sass 1981: 337
Craniella cranium (Mueller 1776: 255) [Little 1963: 60]
Craniella insidiosa Schmidt 1870: 67
Craniella laminaris (George & Wilson 1919: 142) [Wells *et al.* 1960: 200]
Craniella lens Schmidt 1870: 67
Craniella tethyoides Schmidt 1870: 66 [Burton 1959: 198]
Fangophilina submersa Schmidt 1880: 73 [Burton 1959: 201]
Tetilla enoi Broendsted 1934: 7
Tetilla minuta (Wilson 1925: 358)
Trachygellius cinachyra Laubenfels 1936: 158 [Soest & Sass 1981: 338]

Samidae

Samus anonyma Gray 1867: 526 [Thomas 1973: 85]

Theonellidae

Racodiscula asteroides Zittel 1878: 103 [Lendenfeld 1903: 132]
Racodiscula clava (Schmidt 1879: 21) [Lévi & Vacelet 1958: 226]

Pleromidae

Lyidium torquilla Schmidt 1870: 84 [Lévi & Lévi 1983: 109]

Corallistidae

Corallistes bowerbanki (Johnson 1863: 257) [Burton 1959: 217]
Macandrewia amphiaster (Schmidt 1879: 23) [Lendenfeld 1903: 140]
Macandrewia clavatella (Schmidt 1870: 23) [Lendenfeld 1903: 139]
Macandrewia nodosa (Schmidt 1879: 25) [Lendenfeld 1903: 342]
Neopelta imperfecta Schmidt 1880: 88 [Sollas 1888: 345]
Neopelta perfecta Schmidt 1880: 88 [Sollas 1888: 344]

Jereidae

Neosiphonia schmidti Sollas 1888: 334

Discodermiidae

Discodermia dissoluta Schmidt 1880: 87 [Lendenfeld 1903: 129]
Discodermia inscripta (Schmidt 1879: 21) [Lendenfeld 1903: 131]

Scleritodermidae

Aciculites higginsi Schmidt 1879: 29 [Wilson 1925: 464]
Scleritoderma paccardi Schmidt 1879: 28 [Wilson 1925: 463]

Leiodermatiidae

Leiodermatium deciduum (Schmidt 1879: 27) [Wilson 1925: 465]
Leiodermatium lynceus Schmidt 1870: 22 [Topsent 1928: 104]

Leiodermatium madrepora (Schmidt 1879: 28) [Lendenfeld 1903: 146]
Leiodermatium obtectum (Schmidt 1879: 30) [Lendenfeld 1903: 146]

Desmanthidae

Desmanthus incrustans (Topsent 1889: 32) [Vacelet *et al.* 1976: 29]

Siphonidiidae

Gastrophanella cribrophora (Schmidt 1880: 89) [Lendenfeld 1903: 149]
Gastrophanella gemina (Schmidt 1879: 31) [Lendenfeld 1903: 149]
Gastrophanella implexa Schmidt 1879: 29 [Lendenfeld 1903: 149]
Siphonidium ramosum (Schmidt 1870: 21) [Sollas 1888: 348]

Vetulinidae

Vetulina stalactites Schmidt 1879: 19 [Lendenfeld 1903: 150]

Incertae sedis

Collectella avita Schmidt 1880: 86 [Lendenfeld 1903: 128]
Desmascula desdemona Laubenfels 1950: 121
Sulcastrella clausa Schmidt 1879: 27 [Lendenfeld 1903: 134]

Suberitidae

Cometella gracilis Schmidt 1870: 49 [Laubenfels 1936: 151]
Laxosuberites psammophilus Pulitzer-Finali: present paper
Prosuberite epiphytum (Lamarck 1816: 398) [Topsent 1933: 34]
Prosuberite geracei Soest & Sass 1981: 336
Pseudosuberites melanos Laubenfels 1934: 9
Stylospira mona Laubenfels 1934: 10
Suberites domuncula (Olivi 1792: 241) [Pulitzer-Finali 1978: 22]
Suberites lobiceps Schmidt 1870: 47
Terpios aurantiaca Duchassaing & Michelotti 1864: 99 [Soest *et al.* 1983: 204]
Terpios cladoceras Duchassaing & Michelotti 1864: 100
Terpios echinata Duchassaing & Michelotti 1864: 102
Terpios fugax Duchassaing & Michelotti 1864: 102 [Arndt 1934: 42]
Terpios zeteki (Laubenfels 1936a: 450) [Laubenfels 1950: 106]

Polymastiidae

Polymastia robusta (Bowerbank 1861: 236) [Topsent 1900: 134]
Polymastia tenax Pulitzer-Finali: present paper
Polymastia varia Verrill 1907: 341
Radiella sol Schmidt 1870: 48 [Laubenfels 1936: 150]
Ridleia dendiia Laubenfels 1934: 10

Spirastrellidae

Anthosigmella varians (Duchassaing & Michelotti 1864: 86) [Wiedenmayer 1977: 165]
Spheciospongia cuspiäifera (Lamarck 1815: 168) [Pulitzer-Finali: present paper]
Spheciospongia vesparium (Lamarck 1815: 78) [Wiedenmayer 1977: 167]

Spirastrella coccinea (Duchassaing & Michelotti 1864: 84) [Wiedenmayer 1977: 163]
Spirastrella coccinopsis Laubenfels 1953: 537
Spirastrella cunctatrix Schmidt 1868: 17 [Desqueyroux-Faundez 1981: 733]
Spirastrella spinispirulifera (Carter 1879: 345) [Pulitzer-Finali: present paper]

Clionidae

Alectona jamaicensis Pang 1973: 50
Cliona amplicavata Ruetzler 1974: 26
Cliona aprica aprica Pang 1973: 42
Cliona aprica profunda Pang 1973: 45
Cliona caribbaea Carter 1882: 346 [Ruetzler 1974: 5]
Cliona celata Grant 1826: 79 [Arndt 1934: 44]
Cliona delitrix Pang 1973: 28
Cliona dioryssa (Laubenfels 1950: 98) [Ruetzler 1974: 17]
Cliona euryphilla Topsent 1887: 82 [Bergquist 1968: 30]
Cliona flavifodina Ruetzler 1974: 9
Cliona janitrix Topsent 1932: 575 [Pang 1973: 16]
Cliona lampa Laubenfels 1950: 110 [Pang 1973: 18]
Cliona langae Pang 1973: 34
Cliona laticavicola laticavicola Pang 1973: 38
Cliona laticavicola parvispiculata Pang 1973: 41
Cliona millepunctata Hancock 1849: 341
Cliona paucispina Ruetzler 1974: 12
Cliona peponaca Pang 1973: 32
Cliona schmidti (Ridley 1881: 130) [Pang 1973: 8]
Cliona truitti Old 1941: 10 [Little 1963: 57]
Cliona vastifica Hancock 1849: 342 [Hartman 1958: 21]
Cliona vermifera Hancock 1867: 239 [Pang 1973: 12]
Cliona viridis (Schmidt 1862: 77) [Ruetzler 1973: 626]
Cliothosa hancocki (Topsent 1887: 81) [Ruetzler 1973: 634]
Thoosa armata Topsent 1888: 81 [Arndt 1927: 143]

Tethyidae

Aaptos aaptos (Schmidt 1864: 33) [Topsent 1900: 285]
Aaptos bergmanni Laubenfels 1950: 101
Tethya actinia Laubenfels 1950: 116 [Laubenfels 1954: 234]
Tethya aurantium (Pallas 1766: 357)
Tethya crypta (Laubenfels 1949: 20) [Wiedenmayer 1977: 171]
Tethya diploderma Schmidt 1870: 52
Tethya maza Selenka 1879: 472 [Burton 1924: 1040]
Tethya repens Schmidt 1870: 51 [Burton 1924: 1036]

Chondrosiidae

Chondrilla nucula Schmidt 1862: 39 [Wiedenmayer 1977: 186]
Chondrosia collectrix (Schmidt 1870: 25) [Wiedenmayer 1977: 189]
Chondrosia reniformis Nardo 1847: 272 [Wiedenmayer 1977: 188]

Stylocordylidae

Stylocordyla borealis (Loven 1868: 105) [Boury-Esnault & Beveren 1982: 40]

Placospongiidae

Placospongia carinata (Bowerbank 1858: 308) [Vosmaer & Vernhout 1902: 9]
Placospongia melobesioides Gray 1867: 128 [Hechtel 1969: 32]

Timeidae

Diplastrella megastellata Hechtel 1965: 58
Halicometes stellata (Schmidt 1870: 49) [Hechtel 1969: 31]
Timea mixta (Topsent 1896: 125) [Wiedenmayer 1977: 170]
Timea parasitica (Higgin 1877: 294) [Burton 1924: 1041]
Timea perastra (Laubenfels 1936: 145) [Hechtel 1969: 31]
Timea squamata (Schmidt 1870: 25) [Laubenfels 1932: 47]
Timea stellata (Bowerbank 1866: 150)
Timea stellata stylifera Arndt 1927: 139
Timea stenosclera Hechtel 1969: 28
Timea unistellata (Topsent 1892: XXVII) [Pulitzer-Finali: present paper]

Epipolasidae

Aponastra modesta Pulitzer-Finali: present paper
Asteropus ketostea (Laubenfels 1950: 112) [Bergquist 1965: 190]
Epallax ajax Laubenfels 1950: 114
Epipolasis lithophaga Wiedenmayer 1977: 175
Monotria solidissima (Wilson 1902: 387) [Laubenfels 1936: 179]
Scolopes megastra Laubenfels 1953: 542

Axinellidae

Auletta sycinularia Schmidt 1870: 45
Axinella clava Schmidt 1870: 61
Axinella nanaspiculata Hartman 1955: 180
Axinella polycapella Laubenfels 1953: 530 [Hartman 1955: 177]
Axinella ramosa Burton 1954: 229
Axinella reticulata Ridley & Dendy 1886: 481 [Wilson 1902: 400]
Axinella rosacea Verrill 1907: 341 [Wiedenmayer 1977: 159]
Homaxinella appressa (Verrill 1907: 340)
Homaxinella rudis (Verrill 1907: 341)
Homaxinella waltonsmithi Laubenfels 1953: 533
Phakellia folium Schmidt 1870: 62
Phakellia lobata Wilson 1902: 399
Phakellia ventilabrum (Linné 1767: 1296) [Arndt 1934: 90]
Pharetronema zingiberis Sollas 1879: 405
Plicatella aulopora Schmidt 1870: 45
Pseudaxinella lunaecharta (Ridley & Dendy 1886: 481) [Wiedenmayer 1977: 155]
Ptilocaulis arbusculum (Duchassaing & Michelotti 1864: 88) [Soest *et al.* 1983: 204]
Ptilocaulis gracilis Carter 1883: 321 [Wiedenmayer 1977: 152]

Ptilocaulis spiculifer (Lamarck 1813: 449) [Topsent 1933: 23; Wiedenmayer 1977: 153]
Ptilocaulis walpersii (Duchassaing & Michelotti 1864: 90) [Wiedenmayer 1977: 153]
Teichaxinella marquezii (Duchassaing & Michelotti 1864: 40) [Wiedenmayer 1977: 154]
Teichaxinella morchella Wiedenmayer 1977: 154
Teichaxinella shoemakeri Laubenfels 1936: 129
Thrinacophora spinosa Wilson 1902: 400

Bubaridae

Bubaris ammosclera Hechtel 1969: 25
Bubaris mastophora (Schmidt 1870: 61)

Desmoxyidae

Halicnemia verticillata (Bowerbank 1866: 145) [Arndt 1934: 84]
Higginsia strigilata (Lamarck 1813: 450) [Wiedenmayer 1977: 157]
Myrmekioderma styx Laubenfels 1953: 523

Hemiasterellidae

Paratimea galaxa Laubenfels 1936: 146

Heteroxyidae

Anacanthaea rea Laubenfels 1934: 11

Raspailiidae

Echinodictyum lugubre (Duchassaing & Michelotti 1864: 89) [Pulitzer-Finali: present paper]
Echinodictyum pennatum (Duchassaing & Michelotti 1864: 88) [Wiedenmayer 1977: 254]
Echinodictyum pulchrum Broendsted 1934: 18
Ectyoplasia ferox (Duchassaing & Michelotti 1864: 81) [Wiedenmayer 1977: 158]
Endectyon tenax (Schmidt 1870: 62) [Topsent 1920: 23]
Hemectyon hamatum (Schmidt 1870: 62) [Topsent 1920: 26]

Euryponidae

Cyamon vickersi (Bowerbank 1864: 234) [Dendy 1921: 109]
Cyamon vickersi toxifera Arndt 1927: 149
Dragmatyle topsenti Burton 1954: 235
Eurypon clavatella Little 1963: 49
Eurypon clavatum (Bowerbank 1866: 143) [Desqueyroux-Faundez 1981: 737]
Eurypon coronula (Bowerbank 1874: 246) [Topsent 1936: 66]
Tricheurypon viride (Topsent 1889: 43) [Wiedenmayer 1977: 160]

Rhabderemiidae

Rhabderemia minutula (Carter 1876: Pl. XVI) [Topsent 1904: 152]

Agelasidae

Agelas cervicornis (Schmidt 1870: 60) [Topsent 1931: 103]
Agelas clathrodes (Schmidt 1870: 60) [Wiedenmayer 1977: 131]
Agelas conifera (Schmidt 1870: 60) [Wiedenmayer 1977: 130]
Agelas cylindrica (Carter 1883: 314) [Topsent 1933: 34]
Agelas dilatata Duchassaing & Michelotti 1864: 77
Agelas dispar Duchassaing & Michelotti 1864: 76 [Wiedenmayer 1977: 128]
Agelas flabelliformis (Carter 1883: 311) [Wiedenmayer 1977: 131]
Agelas inaequalis Pulitzer-Finali: present paper
Agelas longissima Pulitzer-Finali: present paper
Agelas sceptrum (Lamarck 1815: 163) [Topsent 1933: 33]
Agelas schmidti Wilson 1902: 398 [Wiedenmayer 1977: 129]

Halichondriidae

Amorphinopsis rhaphoxea (Laubenfels 1934: 12)
Batzella rosea Soest 1984: 47
Densa araminta Laubenfels 1934: 14
Halichondria magniconulosa Hechtel 1965: 53
Halichondria melanodocia Laubenfels 1936: 133 [Wiedenmayer 1977: 149]
Halichondria panicea (Pallas 1766: 388) [Hartman 1958: 35]
Rhaphisia ambrosia Laubenfels 1936: 135
Rhaphisia menzeli Little 1963: 54
Spongosorites angulospiculatus (Carter 1879: 346) [Wiedenmayer 1977: 175]
Spongosorites sinuatus Pulitzer-Finali: present paper
Viles ophiraphidites Laubenfels 1934: 13

Hymeniacidonidae

Dictyonella yumae Pulitzer-Finali: present paper
Hymeniacidon amphilecta Laubenfels 1936: 137
Hymeniacidon caerulea Pulitzer-Finali: present paper
Hymeniacidon glabrata Burton 1954: 231
Hymeniacidon heliophila (Parker 1910: 767) [Wiedenmayer 1977: 150]
Oxeostilon burtoni Laubenfels 1934: 15
Prostylissa spongia Laubenfels 1953: 54
Stylotella fibrosa (Ridley & Dendy 1886: 481) [Topsent 1928: 171]
Ulosa arenosa Ruetzler 1981: 41
Ulosa funicularis Ruetzler 1981: 37
Ulosa hispida Hechtel 1965: 51 [Wiedenmayer 1977: 146]
Ulosa ruetzleri Wiedenmayer 1977: 145

Mycalidae

Anomomycale titubans (Schmidt 1870: 55) [Boury-Esnault & Beveren 1982: 54]
Mycale (*Aegagrophila*) *diversisigmata* Soest 1984: 21
Mycale hyatti Pulitzer-Finali: present paper
Mycale inmitis (Schmidt 1870: 57)
Mycale jamaicaensis Pulitzer-Finali: present paper
Mycale laevis (Carter 1882: 291) [Soest 1984: 14]

Mycale laxissima (Duchassaing & Michelotti 1864: 95) [Soest 1984: 29; Pulitzer-Finali: present paper]
Mycale macilenta (Bowerbank 1866: 176) [Little 1963: 50]
Mycale (*Carmia*) *magnirhaphidiphera* Soest 1984: 27
Mycale microsigmatosa (Arndt 1927: 144) [Soest 1984: 24]
Mycale mucifluens Pulitzer-Finali: present paper
Mycale renieroides (Schmidt 1870: 57)
Mycale socialis (Carter 1871: 276)
Mycale whitfieldi Pulitzer-Finali: present paper
Oxymycale strongylata Pulitzer-Finali: present paper
Zygomycale angulosa (Duchassaing & Michelotti 1864: 89) [Pulitzer-Finali: present paper]

Hamacanthidae

Hamacantha agassizi Topsent 1920: 11 [Soest 1984: 143]
Hamacantha johnsoni (Schmidt 1870: 53) [Carter 1882: 297]
Hamacantha tenda (Schmidt 1880: 82) [Topsent 1920: 9]
Pozziella aperta (Topsent 1920: 10) [Topsent 1928: 200]

Cladorhizidae

Chondrocladia amphactis (Schmidt 1880: 83) [Lundbeck 1905: 109]
Chondrocladia concrescens (Schmidt 1880: 83) [Topsent 1920: 12]
Chondrocladia verticillata Topsent 1920: 12 [Topsent 1930a: 427]

Biemnidae

Biemna caribea Pulitzer-Finali: present paper
Biemna microstyla Laubenfels 1950: 85
Biemna tubulata (Dendy 1905: 155) [Soest 1984: 133]
Desmacella annexa Schmidt 1870: 53 [Hooper 1984: 34]
Desmacella campechiana (Topsent 1889: 43) [Soest 1984: 139]
Desmacella jania Verrill 1907: 338 [Wiedenmayer 1977: 162]
Desmacella meliorata Wiedenmayer 1977: 161 [Soest 1984: 24]
Desmacella polysigmata Soest 1984: 138
Desmacella pumilio Schmidt 1870: 53 [Soest 1984: 136]
Desmacella vagabunda Schmidt 1870: 53 [Soest 1984: 139]
Desmacella vicina Schmidt 1870: 53 [Hooper 1984: 50]
Merlia normani Kirkpatrick 1908: 510 [Soest 1984: 211]
Neofibularia bermuda (Laubenfels 1950: 52) [Hartman 1967: 21]
Neofibularia nolitangere (Duchassaing & Michelotti 1864: 82) [Soest 1984: 141]
Neofibularia raphidiphera (Topsent 1894: 34) [Hartman 1967: 20]

Esperiopsidae

Athnacama schmidti (Carter 1882: 297) [Laubenfels 1936: 52]
Burtonispongia dianae (Schmidt 1870: 55) [Laubenfels 1936: 52]
Burtonispongia tunicata (Schmidt 1870: 55) [Laubenfels 1936: 52]
Desmacidon infesta Schmidt 1870: 55
Desmapsamma anchorata (Carter 1882: 283) [Soest 1984: 35]

Guitarra fimbriata Carter 1874: 210 [Burton 1929: 426)
Iotrochota birotulata (Higgin 1877: 296) [Soest 1984: 38]
Iotrochota imminuta Pulitzer-Finali: present paper
Monanchora barbadensis Hechtel 1969: 21 [Soest 1984: 40]
Monanchora unguifera (Laubenfels 1953: 528) [Soest 1984: 42]
Protophlitaspongia antillana Pulitzer-Finali: present paper
Strongylacidon poriticola Soest 1984: 42
Strongylacidon viridis Soest 1984: 44
Vomerula tibicen Schmidt 1880: 83 [Wilson 1925: 437]

Coelosphaeridae

Coelosphaera fistula Little 1963: 44
Coelosphaera hechteli Soest 1984: 71
Coelosphaera raphidifera Hechtel 1969: 13
Coelosphaera tunicata (Schmidt 1870: 55) [Hechtel 1969: 16]
Damiria testis Topsent 1928: 325 [Soest 1984: 74]

Cornulidae

Cornulum johnsoni (Laubenfels 1934: 21) [Soest 1984: 76]

Latrunculiidae

Didiscus oxeatus Hechtel 1983: 76 [Soest 1984: 146 as *D. flavus*]

Crellidae

Crella chelifera Soest 1984: 77
Crella papillosa (Schmidt 1870: 57) [Topsent 1925: 687]
Yvesia papillosa (Schmidt 1870: 57) [Topsent 1892: 103]

Myxillidae

Acanthacarnus souriei Lévi 1952: 54 [Soest 1984: 63]
Acarnus innominatus Gray 1867: 544 [Soest 1984: 61]
Anomolissa amaza Laubenfels 1934: 17
Forcepia (*Ectoforcepia*) *grandisigmata* Soest 1984: 67
Forcepia (*Ectoforcepia*) *trilabis* (Boury-Esnault 1973: 280) [Soest 1984: 66]
Lissodendoryx isodictyalis (Carter 1882: 285) [Soest 1984: 54]
Lissodendoryx sigmata (Laubenfels 1949: 15) [Soest 1984: 57]
Lissodendoryx strongylata Soest 1984: 58
Melonanchora elliptica Carter 1874: 212 [Lundbeck 1905: 211]
Myxilla distorta Burton 1954: 226
Myxilla incrustans (Johnston 1842: 122) [Arndt 1934: 58]
Myxilla jecusculum (Bowerbank 1866: 198) [Topsent 1894: 34]
Myxilla mucronata Pulitzer-Finali: present paper

Tedaniidae

Hemitedania baki Soest 1984: 53
Tedania anhelans (Lieberkuehn 1859: 521)
Tedania anhelans bermudensis (Ridley & Dendy 1887: 51)
Tedania ignis (Duchassaing & Michelotti 1864: 83) [Soest 1984: 49]

Tedania tora Laubenfels 1950: 72
Tedanione foetida Wilson 1894: 338

Psammascidae

Holopsamma helwigi Laubenfels 1936: 97 [Pulitzer-Finali: present paper]

Hymedesmiidae

Acanthancora coralliophila Soest 1984: 85
Hymedesmia agariciicola Soest 1984: 82
Hymedesmia curacaoensis Soest 1984: 82
Hymedesmia jamaicaensis Soest 1984: 79
Hymedesmia nummota Laubenfels 1936: 86
Hymedesmia palmatichelifera Soest 1984: 80

Phorbasidae

Phorbas amaranthus Duchassaing & Michelotti 1864: 92 [Soest 1984: 86]

Clathriidae

Artemisina melana Soest 1984: 122
Clathria carteri Topsent 1889: 38 [Soest 1984: 128]
Clathria foliacea Topsent 1889: 39 [Wiedenmayer 1977: 145]
Clathria obliqua (George & Wilson 1919: 148) [Little 1963: 49]
Clathria prolifera (Ellis & Solander 1786: 189) [Soest 1984: 91]
Clathria rectangulosa Schmidt 1870: 60
Clathria (*Microciona*) *simpsoni* Soest 1984: 97
Clathria vasiformis (Laubenfels 1953: 525)
Clathria (*Microciona*) *bulbotoxa* Soest 1984: 103
Clathria (*Microciona*) *hymedesmioides* Soest 1984: 104
Dictyociona adioristica Laubenfels 1953: 526
Echinoclathria columbia (Laubenfels 1936: 13) [Laubenfels 1948: 36]
Microciona affinis (Topsent 1889: 43) [Soest 1984: 93]
Microciona calla (Laubenfels 1934: 16) [Soest 1984: 100]
Microciona ferrea (Laubenfels 1936a: 460) [Soest 1984: 101]
Microciona rarispinosa Hechtel 1965: 42
Microciona spinosa Wilson 1902: 396 [Soest 1984: 95]
Pandaros acanthifolium Duchassaing & Michelotti 1864: 90 [Soest 1984: 127]
Plocamia gymnazusa Schmidt 1870: 62
Plocamilla barbadensis Soest 1984: 125
Plocamilla penneyi (Laubenfels 1936: 76) [Soest 1984: 126]
Plocamionida topsenti Burton 1954: 229
Raspeloplocamia clopetaria (Schmidt 1870: 63) [Burton 1935: 402]
Raphidophlus arcifer (Schmidt 1880: 81)
Raphidophlus fascicularis (Topsent 1889: 35) [Soest 1984: 122]
Raphidophlus isodictyoides Soest 1984: 118
Raphidophlus juniperinus (Lamarck 1814: 444) [Soest 1984: 109]
Raphidophlus minutus Soest 1984: 115
Raphidophlus orientalis Broendsted 1934: 20

Raphidophlus oxeatus Soest 1984: 120
Raphidophlus raraechelae Soest 1984: 116
Raphidophlus schoenus (Laubenfels 1936: 100) [Soest 1984: 112]

Petrosiidae

Petrosia pellasarca (Laubenfels 1934: 23) [Soest 1980: 80; Pulitzer-Finali: present paper]
Petrosia weinbergi Soest 1980: 75
Strongylophora dendyi Hechtel 1969: 10
Strongylophora hartmani Soest 1980: 76
Strongylophora rampa Laubenfels 1934: 19 [Soest 1980: 79]
Strongylophora santa Laubenfels 1936a: 459 [Soest 1980: 79]
Xestospongia caminata Pulitzer-Finali: present paper
Xestospongia dominicana Pulitzer-Finali: present paper
Xestospongia halichondroides (Wilson 1902: 389) [Wiedenmayer 1977: 113]
Xestospongia muta (Schmidt 1870: 44) [Soest 1980: 66]
Xestospongia portoricensis Soest 1980: 70
Xestospongia proxima (Duchassaing & Michelotti 1864: 84) [Soest 1984: 143]
Xestospongia rosariensis Zea & Ruetzler 1983: 817
Xestospongia subtriangularis (Duchassaing 1850: 26) [Soest 1980: 71]
Xestospongia wiedenmayeri Soest 1980: 68

Oceanapiidae

Biminia stalagmitica Wiedenmayer 1977: 124
Foliolina peltata Schmidt 1870: 42 [Lévi & Lévi 1983: 973]
Oceanapia amphirhiza (Schmidt 1880: 76)
Oceanapia bartschii (Laubenfels 1934: 21) [Soest 1980: 87]
Oceanapia fibulata (Schmidt 1880: 76)
Oceanapia fistulosa (Bowerbank 1873: 19) [Soest 1980: 114]
Oceanapia hondurasensis (Carter 1882: 122) [Laubenfels 1950: 67]
Oceanapia niduliformis (Carter 1882: 123)
Oceanapia oleracea (Schmidt 1870: 35) [Soest 1980: 89]
Pachypellina podatypa (Laubenfels 1934: 23) [Soest 1980: 12]
Pellina carbonaria (Lamarck 1814: 375) [Soest 1980: 83]
Pellina fistulosa (Bowerbank 1866: 299) [Topsent 1888: 148]
Pellina nodosa (George & Wilson 1919: 152) [Soest 1980: 80]
Pellina penicilliformis Soest & Saas 1981: 335

Renieridae

Haliclona aurantiaca dura (Wilson 1902: 393)
Haliclona finitima (Schmidt 1870: 33)
Haliclona hogarthi Hechtel 1965: 20
Haliclona molitba Laubenfels 1949: 9 [Soest 1980: 9]
Haliclona sorangae (Broendsted 1934: 14)
Reniera aquaeductus Schmidt 1862: 73 [Wiedenmayer 1977: 87]
Reniera ascidia Schmidt 1870: 40

Reniera carmabi Soest 1980: 14
Reniera curacaoensis Soest 1980: 12
Reniera fortior Schmidt 1870: 40
Reniera hebes Schmidt 1870: 40 [Laubenfels 1932: 61]
Reniera tubifera George & Wilson 1919: 145 [Soest 1980: 15]

ADOCIIDAE

Adocia albifragilis Hechtel 1965: 28
Adocia amphioxa (Laubenfels 1950: 64) [Soest 1980: 20]
Adocia implexiformis Hechtel 1965: 27 [Soest 1980: 18]
Adocia neens (Topsent 1918: 536) [Soest 1980: 18]
Adocia perforata Pulitzer-Finali: present paper
Orina calcinea (Burton 1954: 224)
Orina tenerrima (Burton 1954: 225) [Soest 1980: 25]
Sigmadocia caerulea Hechtel 1965: 30 [Soest 1980: 21]
Sigmadocia piscaderaensis Soest 1980: 22
Sigmadocia recondita Wiedenmayer 1977: 111

NIPHATIDAE

Amphimedon cellulosa (Verrill 1907: 335)
Amphimedon complanata (Duchassaing 1850: 26) [Soest 1980: 31]
Amphimedon compressa Duchassaing & Michelotti 1864: 78 [Soest 1980: 26]
Amphimedon elastica (Verrill 1907: 336)
Amphimedon erina (Laubenfels 1936a: 457) [Soest 1980: 31]
Amphimedon leprosa Duchassaing & Michelotti 1864: 82
Amphimedon micropora (Verrill 1907: 337) [Laubenfels 1950: 3]
Amphimedon monticulosa (Verrill 1907: 336) [Soest 1980: 34]
Amphimedon variabilis (Dendy 1890: 353) [Soest 1980: 12]
Amphimedon viridis Duchassaing & Michelotti 1864: 81 [Soest 1890: 29]
Cribrochalina caribica Pulitzer-Finali: present paper
Cribrochalina cretacea Schmidt 1870: 36 [Soest 1980: 45]
Cribrochalina dura (Wilson 1902: 393) [Wiedenmayer 1977: 123]
Cribrochalina spiculosa (Dendy 1890: 354) [Soest 1980: 43]
Cribrochalina vasculum (Lamarck 1814: 385) [Wiedenmayer 1977: 119]
Gelliodes leucosolenia Laubenfels 1934: 22
Gelliodes ramosa (Carter 1882: 283) [Hartman 1967: 20; Wiedenmayer 1977: 95]
Gelliodes sosuae Pulitzer-Finali: present paper
Niphates alba Soest 1980: 40
Niphates amorpha (Wiedenmayer 1977: 99) [Soest 1980: 39]
Niphates digitalis (Lamarck 1814: 436) [Soest 1980: 37]
Niphates erecta Duchassaing & Michelotti 1864: 93 [Soest 1980: 35; Pulitzer-Finali: present paper]
Siphonodictyon brevitubulatum Pang 1973: 56
Siphonodictyon cachacrouense Ruetzler 1971: 4
Siphonodictyon coralliphagum Ruetzler 1971: 5
Siphonodictyon incrustans (Ruetzler 1971: 9) [Soest 1981: 19]

Siphonodictyon siphonum (Laubenfels 1949: 11) [Ruetzler 1971: 11; Wiedenmayer 1977: 126]
Siphonodictyon xamaycaense Pulitzer-Finali: present paper

Callyspongiidae

Callyspongia arcesiosa Laubenfels 1936: 56
Callyspongia armigera (Duchassaing & Michelotti 1864: 48) [Soest 1980: 60; 1981: 20]
Callyspongia clavaherculis (Duchassaing & Michelotti 1864: 40) [Soest 1978: 20]
Callyspongia cyathus (Schmidt 1870: 35) [Topsent 1938: 4]
Callyspongia eschrichti Duchassaing & Michelotti 1864: 56 [Soest 1980: 50]
Callyspongia fallax Duchassaing & Michelotti 1864: 57 [Soest 1980: 47]
Callyspongia fallax debilis Wiedenmayer 1977: 95
Callyspongia inflata Duchassaing & Michelotti 1864: 57
Callyspongia longissima (Duchassaing & Michelotti 1864: 51) [Wiedenmayer 1977: 107]
Callyspongia maxima (Dendy 1890: 365)
Callyspongia pallida Hechtel 1965: 36 [Soest 1980: 51]
Callyspongia plicifera (Lamarck 1813: 435) [Soest 1980: 61]
Callyspongia repens Little 1963: 42
Callyspongia sagoti (Duchassaing & Michelotti 1864: 54)
Callyspongia sanctacrucis (Duchassaing & Michelotti 1864: 46)
Callyspongia simplex (Duchassaing & Michelotti 1864: 47) [Pulitzer-Finali: present paper]
Callyspongia strongylophora Hartman 1955: 168 [Soest 1980: 54]
Callyspongia tenerrima Duchassaing & Michelotti 1864: 57 [Soest 1980: 62]
Callyspongia vaginalis (Lamarck 1814: 436) [Soest 1980: 56]
Siphonochalina densa Schmidt 1870: 34
Siphonochalina bullata (Lamarck 1813: 437) [Topsent 1931: 76]
Siphonochalina viridescens Schmidt 1880: 76
Toxochalina multiformis Pulitzer-Finali: present paper

Spongiidae

Coscinoderma lanuga Laubenfels 1936: 10
Coscinoderma musicalis (Duchassaing & Michelotti 1864: 39) [Soest 1978: 29]
Hippospongia gossypina (Duchassaing & Michelotti 1864: 32) [Soest 1978: 21]
Hippospongia lachne Laubenfels 1936: 11 [Soest 1978: 22]
Hyattella cavernosa (Pallas 1766: 394) [Bergquist 1980: 452]
Hyattella intestinalis (Lamarck 1814: 439) [Soest 1978: 23]
Spongia barbara Duchassaing & Michelotti 1864: 31 [Soest 1978: 16]
Spongia bartholmei Duchassaing & Michelotti 1864: 42 [Laubenfels 1950: 51]
Spongia cavernosa Duchassaing & Michelotti 1864: 30 [Ehlers 1870: 7]
Spongia cerebriformis insolita Wiedenmayer 1977: 58
Spongia dumetosa Duchassaing & Michelotti 1864: 43
Spongia dura Hyatt 1877: 522 [Laubenfels 1948: 8]

Spongia graminea Hyatt 1877: 516 [Soest 1978: 19]
Spongia guadalupensis Duchassaing & Michelotti 1864: 43
Spongia haagensenii Duchassaing & Michelotti 1864: 42
Spongia isidis Duchassaing & Michelotti 1864: 41
Spongia krebbresii Duchassaing & Michelotti 1864: 44
Spongia napriformis Duchassaing & Michelotti 1864: 43
Spongia obliqua Duchassaing & Michelotti 1864: 38 [Soest 1978: 8]
Spongia obscura (Hyatt 1877: 521) [Soest 1978: 14]
Spongia pertusa (Hyatt 1877: 512) [Soest 1978: 12]
Spongia solitaria (Hyatt 1877: 519) [Soest 1978: 18]
Spongia sterea Laubenfels & Storr 1958: 108 [Soest 1978: 19]
Spongia subcircularis Duchassaing & Michelotti 1864: 37
Spongia tampa (Laubenfels & Storr 1958: 110) [Soest 1978: 15]
Spongia tubulifera Lamarck 1814: 384 [Soest 1978: 10]

Thorectidae

Cacospongia linteiformis (Lamarck 1813: 456) [Topsent 1933: 8]
Fasciospongia cerebriformis (Duchassaing & Michelotti 1864: 32) [Soest 1978: 43]
Hyrtios caracasensis (Carter 1882: 273) [Soest 1978: 47]
Hyrtios proteus Duchassaing & Michelotti 1864: 74 [Soest 1978: 45]
Hyrtios psellus (Laubenfels 1936: 96) [Soest 1984: 70]
Hyrtios spongeliformis (Wilson 1902: 403) [Bergquist 1980: 460]
Hyrtios vilis Duchassaing & Michelotti 1864: 75
Hyrtios violaceus (Duchassaing & Michelotti 1864: 95) [Soest 1978: 30; 1981: 22]
Ircinia campana (Lamarck 1813: 385) [Soest 1978: 39]
Ircinia felix (Duchassaing & Michelotti 1864: 72) [Soest 1978: 33]
Ircinia hummelincki Soest 1978: 37
Ircinia ramosa Keller 1889: 345 [Little 1963: 34]
Ircinia strobilina (Lamarck 1816: 383) [Soest 1978: 40]
Ircinia variabilis (Schmidt 1862: 34)
Ircinia verrucosa (Lieberkuehn 1859: 369)
Smenospongia aurea (Hyatt 1875: 404) [Wiedenmayer 1977: 69]
Smenospongia conulosa Pulitzer-Finali: present paper
Smenospongia echina (Laubenfels 1934: 25) [Bergquist 1980: 456, 478]
Smenospongia maynardii (Hyatt 1877: 529)

Dysideidae

Dysidea chromogenia (Laubenfels 1950: 20) [Bergquist 1980: 464]
Dysidea crawshayi Laubenfels 1936: 28
Dysidea etheria Laubenfels 1936: 28 [Soest 1978: 53]
Dysidea fragilis (Montague 1818: 114)
Dysidea janiae (Duchassaing & Michelotti 1864: 101) [Soest 1978: 51]
Dysidea variabilis (Duchassaing & Michelotti 1864: 80) [Soest 1978: 52]
Eurysongia rosea Laubenfels 1936: 29 [Little 1963: 36]

Aplysillidae

Aplysilla glacialis (Merejkowsky 1878: 259) [Bergquist 1980: 484]
Aplysilla sulfurea Schulze 1878: 405
Chelonaplysilla erecta (Row 1911: 360) [Soest 1978: 71]
Darwinella muelleri (M. Schultze 1865: 7)
Darwinella rosacea Hechtel 1965: 17
Pleraplysilla stocki Soest 1978: 75

Dictyodendrillidae

Dictyodendrilla nux (Laubenfels 1950: 29) [Bergquist 1980: 488]
Igernella notabilis (Duchassaing & Michelotti 1864: 106) [Bergquist 1980: 490]

Halisarcidae

Halisarca purpurea Little 1963: 37

Aplysinidae

Aplysina aerophoba (Nardo 1833: 519)
Aplysina archeri (Higgin 1875: 223) [Soest 1978: 58]
Aplysina cauliformis (Carter 1882: 268) [Soest 1978: 62]
Aplysina fistularis (Pallas 1766: 385) [Soest 1981: 25]
Aplysina fulva (Pallas 1766: 385) [Soest 1981: 25]
Aplysina insularis (Duchassaing & Michelotti 1864: 61) [Soest 1978: 56; Pulitzer-Finali: present paper]
Aplysina lacunosa (Lamarck 1814: 434) [Soest 1978: 61]
Aplysina longissima Carter 1882: 271 [Little 1963: 35]
Aplysina tenuissima (Hyatt 1875: 403)
Verongula gigantea (Hyatt 1875: 405) [Wiedenmayer 1977: 76]
Verongula praetexta (Hyatt 1875: 405) [Bergquist 1980: 494]
Verongula rigida (Esper 1794: Pl. 27) [Soest 1977: 67]

Aplysinellidae

Pseudoceratina crassa (Hyatt 1875: 401) [Soest 1981: 26]

Ianthellidae

Ianthella basta (Pallas 1766: 309) [Bergquist 1980: 497]

Ceratoporellidae

Ceratoporella nicholsoni (Hickson 1911: 195) [Hartman & Goreau 1970: 206]
Goreauiella auriculata Hartman 1969: 17 [Hartman & Goreau 1970: 217]
Hispidopetra miniana Hartman 1969: 12 [Hartman & Goreau 1970: 216]
Stromatospongia norae Hartman 1969: 7 [Hartman & Goreau 1970:215]
Stromatospongia vermicola Hartman 1969: 3 [Hartman & Goreau 1970: 213]

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ABSTRACT

A collection of shallow-water Demospongiae, made in the Bahamas, Jamaica, the Dominican Republic and Puerto Rico in the years 1963 and 1964, is systematically

recorded. It comprises 132 species, of which 31 are described as new: *Stellettinopsis dominicana*, *Stelletta variastra*, *Pachataxa lutea*, *Geodia flexisclera*, *Erylus bahamensis*, *E. clavatus*, *Laxosuberites psammophilus*, *Polymastia tenax*, *Aponastra modesta*, *Agelas inaequalis*, *A. longissima*, *Spongosorites sinuatus*, *Hymeniacidon caerulea*, *Dictyonella yumae*, *Mycale mucifluens*, *M. jamaicaensis*, *M. whitfieldi*, *M. hyatti*, *Oxymycale strongylata*, *Biemna caribea*, *Protophlitaspongia antillana*, *Iotrochota imminuta*, *Myxilla mucronata*, *Xestospongia dominicana*, *X. caminata*, *Adocia perforata*, *Siphonodictyon xamaycaense*, *Gelliodes sosuae*, *Cribrochalina caribica*, *Toxochalina multiformis*, *Smenospongia conulosa*.

A list of the Demospongiae so far recorded from the West Indies is added in appendix.

The collection has been deposited at the Museum of Natural History of Genoa.

RIASSUNTO

Una collezione di Demospongiae, ottenuta da acque poco profonde delle Bahamas, Giamaica, Repubblica Dominicana e Portorico negli anni 1963 e 1964, viene sistematicamente registrata. Essa comprende 132 specie, di cui 31 nuove: *Stellettinopsis dominicana*, *Stelletta variastra*, *Pachataxa lutea*, *Geodia flexisclera*, *Erylus bahamensis*, *E. clavatus*, *Laxosuberites psammophilus*, *Polymastia tenax*, *Aponastra modesta*, *Agelas inaequalis*, *A. longissima*, *Spongosorites sinuatus*, *Hymeniacidon caerulea*, *Dictyonella yumae*, *Mycale mucifluens*, *M. jamaicaensis*, *M. whitfieldi*, *M. hyatti*, *Oxymycale strongylata*, *Biemna caribea*, *Protophlitaspongia antillana*, *Iotrochota imminuta*, *Myxilla mucronata*, *Xestospongia dominicana*, *X. caminata*, *Adocia perforata*, *Siphonodictyon xamycaense*, *Gelliodes sosuae*, *Cribrochalina caribica*, *Toxochalina multiformis*, *Smenospongia conulosa*.

In appendice viene data una lista delle Demospongiae finora segnalate dalle Indie Occidentali.

La collezione è stata depositata presso il Museo Civico di Storia Naturale di Genova.